REPORT RESUMES

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CHARACTERISTICS OF HIGH SCHOOL SENIORS AS RELATED TO SUBSEQUENT COLLEGE ATTENDANCE.

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THIS STUDY EXAMINED "TALENT LOSS" FROM INADEQUATE EDUCATION IN THE STATE OF WEST VIRGINIA. THE CHARACTERISTICS OF 1,698 HIGH SCHOOL SENIORS FROM 10 SCHOOLS CONSTITUTING A SAMPLE OF THE STATE WERE STUDIED IN RELATION TO SUBSEQUENT COLLEGE ATTENDANCE. STUDENTS RESPONDED TO A PERSONAL DATA FORM, THE COLLEGE IMAGE INDEX, THE SCHOOL AND COLLEGE ABILITY TEST, THE ACADEMIC SELF-CONCEPT SCALE, AND THE MCCLELLAND NEED ACHIEVEMENT TEST. IN THE FALL OF 1964, THOSE STUDENTS WHO WENT TO COLLEGE WERE IDENTIFIED. ANOTHER SURVEY FOLLOWED IN THE FALL OF 1965. THE RESULTS SHOWED THAT PERSONALITY VARIABLES ANALYZED IN THE STUDY WERE SIGNIFICANT IN DIFFERENTIATING BETWEEN COLLEGE AND NONCOLLEGE SUBJECTS. ECONOMIC FACTORS SEEMED INDIRECTLY RELATED TO COLLEGE ATTENDANCE BECAUSE THEY DETERMINE THE ENVIRONMENTAL CONDITIONS WHICH GIVE RISE TO SIGNIFICANT PERSONALITY VARIABLES. NO ONE VARIABLE WAS FOUND SIGNIFICANT FOR ALL SOCIOECONOMIC LEVELS. (SK)

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CHARACTERISTICS OF HIGH SCHOOL SENIORS AS RELATED TO SUBSEQUENT COLLEGE ATTENDANCE

Cooperative Research Project No. 2152

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B.H.B.

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CHAPTER I

INTRODUCTION

Educational underdevelopment of the youth is one of the most acute problems of theAppalachian Region. The youth of the Appalachian Region have not availed themselves of the college experience to the same extent as other American youth. The economic, social and cultural loss which is attributable to the lack of educational development is not known precisely, but all available indications suggest that the loss in undeveloped human resources is of great magnitude. "Talent Loss" from inadequate education is an important factor in the current economic and social problems of the area.

This is the first investigation of the conditions related to the low incidence of college attendance for the region. The educator, the psychologist and the sociologist should find the results useful in any effort to understand or upgrade the educational level of the region.

Objectives and Hypotheses

The purpose of this study was:

1. To examine the nature and extent of the so-called "talent loss" in the state of West Virginia. Although the percentage of high school graduates going on to college is far below average in the Appalachian Region, the extent of the overlapping in ability scores between the college and non-college groups is not known; similarly, the extent of the so-called "talent loss" is not known.

2. To study the relationship of college attendance in the region to scholastic aptitude (School and College Ability Test), academic self-concept (as measured by an adopted form of the instrument developed and validated by Brookover), achievement motivation (as measured by McClelland Need Achievement Projective Technique), college image (as measured by a scale developed by the investigators), and socio-economic cultural background factors of graduating high school seniors. As indicated in the review of literature, some of these variables have been related to college attendance in other studies.

3. To explore the interrelationship among the variables used in the study.

The three objectives listed above were approached through the testing of the following hypotheses:

1. High school graduates (a) who do not enroll in college by October following graduation, (b) who enroll in college after graduation but withdraw from college at or before the end of the first year, (c) who enroll in college

and remain enrolled through the beginning of the first semester of the second year, have significantly different scores on measures of academic self-concept, achievement motivation, academic aptitude, college image, academic achievement, and selected socio-economic cultural variables.

2. It is possible with a multivariate combination of scores on achievement motivation, college image, academic self-concept, and selected socio-economic cultural variables to differentiate among the nine groups of high school graduates who have been classified into a group by knowledge of college attendance, college non-attendance or college persistence, and by scholastic aptitude (a three by three classification of nine groups).

Review of Literature

The review of literature was used to determine the nature and extent of the "talent loss" in the United States so that we have data with which to compare the West Virginia "talent loss" data. It was further used to determine the variables related to low incidence of college attendance or persistence.

"Talent" itself has been defined in varied ways in different studies, but whatever the exact score, percentile cut-off or definition used, there is general agreement that too many of the nation's most talented boys and girls neither attend college nor develop their potential. Even though talented students from lower socio-economic levels have risen in our society, this upward mobility shows wide differences. In complex societies, there must be concern for and consideration of the opportunities provided in order that all individuals may make use of their talents (Anderson, 1960).

Findings from "Project Talent" indicated that in 1960, 43 per cent of the nation's high school graduates entered college within one year after graduation (Flanagan, 1964). By the fall of 1963, 45 per cent of the nation's 1,732,243 high school graduates entered college after graduation ("School Statistics", Fall, 1964). More than 50 per cent of the nation's 2,302,000 (1,129,000 boys and 1,173,000 girls) 1964 high school graduates entered college in the fall of 1964 (The New International Yearbook, 1965; A Fact Book on Higher Education, 1965). Of the 25,046 seniors (12,098 boys and 12,948 girls) in West Virginia in 1964, approximately 30 per cent entered college in the fall of 1964 (51st Report -- State Superintendent of Free Schools, 1964).

In addition to West Virginia losing a disproportionate share of her capable young people between high school graduation and college attendance, the state is also losing students in high school. Only 61.8 per cent of the West Virginia ninth graders graduated in 1964. In the number of ninth graders who continued in school and graduated, West Virginia ranked forty-first in the nation in 1963-64 and forty-fourth in the nation in 1964-65 ("School Statistics", Fall, 1964).

Previous research findings not only indicate a range in the extent of the talent loss, but also indicate a general pattern in relation to the nature of this talent loss. A New York study, which considered the 1963 high school graduates without regard to ability, showed that 56 per cent of the students enrolled in college full-time in the fall of 1963 and 11.5 per cent enrolled for part-time college work (Shaw, 1965). Nationally, early results of "Project Talent" showed that while 90 per cent of the boys and 80 per cent of the girls in the top ten per cent in aptitude for academic work entered college in the first year after graduation, only 80 per cent of the top quarter entered college (Flanagan, 1964).

A special research report, Kentucky's Top 15 Percent, revealed that 75 per cent of the top 15 per cent of the group studied had enrolled in college, leaving a loss of 25 per cent of the top students (McDaniel and Forenback, 1960). An Oregon study (1959) of the top ten per cent of the high school graduates showed that only 72 per cent of the girls in the top group enrolled in college in the fall following their graduation as compared to 91 per cent of the high ability boys who enrolled (Nickerson, 1960).

J. K. Little's Wisconsin study reported that of the top 25 per cent of the graduates for the state, 85 per cent of the boys and 70 per cent of the girls entered college (Little, 1959). In a study which considered the top ten per cent of the 1960 Michigan high school graduates, nine out of ten (94 per cent of the boys and 84 per cent of the girls) were in the college preparatory course. Of this group, 84 per cent of the boys and 77 per cent of the girls (total 82 per cent of the top ten per cent) went to college, 13 per cent going out of the state for their education, and six out of ten entering public colleges within Michigan (Milholland, Womer, Walker, 1963).

The Missouri study, which used two groups of high ability (high group: 85-95 percentile; median group: 65-85 percentile) omitted the 96-99 percentile group since studies by Holland and Stalnaker indicated that practically all of this elite group attend college. Of the two groups used, 94 per cent of the boys and 77 per cent of the girls in the high group and 74 per cent of the boys and 39 per cent of the girls in the median group attended college. The percentage of attendance of median group girls was quite low in relation to attendance by other groups (Henry, 1965). Wolfe estimated that of the top 30 per cent, 75 per cent of the boys and 55 per cent of the girls enter college (Wolfe, 1960).

Variables Related to College Attendance

Previous research efforts have identified ability, sex, high school achievement, place of residence, peer influence, self-concept, motivation, and education, occupation and earnings of parents as variables related to college attendance (Beezer and Hjelm, 1961; McDill and Coleman, 1964). Many of these variables are operative in West Virginia (Bailey and Ikenberry, 1962). However, the findings do not always agree as to the extent, importance, and specific interrelationships of these variables to the college-going patterns of high ability high school graduates.

Even though girls are more likely to complete high school, boys of equal ability are more apt to go on to higher education. Even within the able group, sex and ability play a large part in college attendnace (Shaw, 1965; Henry, 1965; Beezer and Hjelm, 1961).

In the high ability group (upper 17 per cent based on college aptitude) taken from the lower socio-economic group, it was found that 84 per cent of the boys and 64 per cent of the girls had college plans (Berdie and Hood, 1964).

Previous research on college attendance and persistence had shown that of the 82 per cent of the high ability males (above the 80th percentile) and 39.4 per cent of the other males (below the 80th percentile) who entered college, 65 per cent of the high group and 29.4 per cent of the other group persisted in college for more than two years. This was statistically significant at the .01 level. For girls, 69.4 per cent of the high ability group and 36 per cent of the other group entered college, and of these 74.1 per cent of the high group and 50 per cent of the other group persisted for more than two years. This difference was significant at the .05 level (Dugan, 1960).

When sex and ability were controlled, a study of Missouri high school graduates in the upper one-third with respect to college ability indicated that family financial power appeared to be a significant factor. However, when other variables related to college attendance were controlled, the impact of family financial power was substantially reduced (Henry, 1965). A study of Indiana students in the top ten per cent who did not go on to college revealed that only 43.4 per cent had family income of more than $5,000 (Wright and Jung, 1959). Little found that of those students in the top 25 per cent who did not attend college, only one out of eleven indicated that they would not even if they had the money (Little, 1958).

When comparing students from different socio-economic levels, Goetsch found that only 20 per cent of the superior high school students from the lower income bracket attended college while 90 per cent of the superior students from the upper income brackets attended college. He concluded that income and/or low socio-economic status is quite operative in the utilization of the opportunity to attend college (Goetsch, 1940).

In a survey of the financial status of entering freshmen at the University of Massachusetts, it was found that 50 per cent of the parents paid less than $768 in federal income tax in 1960, while only 2.3 per cent paid more than $2,300 in taxes (Henry, 1965).

West believed that aid is a major factor in college attendance by the able and favored federal scholarships (West, 1963).In contrast, Smith, Mathany, and Mills found cultural and motivational factors to be more important to college attendance than family financial power (Smith, Mathany, and Mills, 1960).

Financial power is related to college attendance and it appears that the greater the financial ability of the family, the greater the possibility for college attendance. With the exception of high ability males, financial power seems to have a general effect upon college attendance for all sex and ability groups. Berdie reported a correlation of .10 between economic status and college attendance (Berdie, 1954). Though finances are certainly related to college attendance, it would appear that this variable has been overrated as a critical factor . It is so interrelated with other college-going variables that it cannot be considered in isolation from these other significant variables.

All of this may indicate that family financial power is more critical when the other variables which are important for college attendance are lacking. Henry indicated that this suggests that an attempt to increase the number of top students who attend college must emphasize finding and counseling those able students whose backgrounds reflect a lack of college-going orientation and must provide financial aid for those who need it (Henry, 1965).

To determine the extent to which college attendance could be predicted, Berdie and Hood considered ability, school achievement, socio-economic, cultural, and personality factors. They found a marked relationship (45 per cent of the boys and 37 per cent of the girls) between sex and college attendance plans. Considering high school grades and MSAT scores, including sex and area factors, the multiple correlation was .56 as to whether or not the students would attend college.

The high ability students more frequently planned to attend college. In metropolitan and urban areas, 90 per cent of the high ability males planned to attend college. The few high ability students who did not plan to attend college were women from all residential areas and men from the farm. The percentage of students planning to attend college increased three times as fast for higher ability students as for other ability groups. This increase was greatest for boys in metropolitan areas and smallest for girls from farm as well as non-farm areas. Correlation coefficients from .30 to .60 were found between plans to enter college and scholastic aptitude scores and high school percentile ranks (Berdie and Hood, 1963; 1964). Of those who resided in metropolitan areas, 50 per cent planned to attend college while 43 per cent of the students from town and small cities and only 26 per cent of the farm students planned to attend college. At every ability level, students from farms plan less for college than do students from metropolitan areas. The proportion of women planning to attend college is smaller than the proportion of men with plans for college.

To explain college attendance, it was found that ability and academic achievement weigh the heaviest; family background and personality carry some weight; but to none of these alone can great significance be attached. The relationships between the criterion, college attendance, and the predictor variables are one thing for the group, but are entirely different things for each student in the group (Berdie and Hood, 1966; Cowhig and Nam, 1961, 1962).

Elder found that rural youth are less likely to enroll in college because of educational opportunity, values and goal orientation, and achievement potential. Residence and father's occupation plus college plans and placement in a college preparatory course in high school best predicted enrollment in college. He also found that youth with a large number of siblings appeared to be at a disadvantage in chances for college education; but that the first born in the family seemed to enjoy the greatest probability of college attendance.

The chief reasons advanced for either non-attendance or short-termed attendance were: low income, farm family, needed to work at home, an opportunity to have a farm, attended a low-income high school, currently enrolled in the vocational curriculum, and neither lived near a public college nor was the eldest in the family (Elder, 1963).

Even though students may not be directly influenced to attend college because of personality variables, knowledge of how those who do go on differ from those who do not may help explain reasons for college attendance or non-attendance.

Those high ability students who contemplated college saw themselves as being more sociable, did not consider themselves as being shy, and indicated that they experienced fewer conflicts with authority. Girls more often considered their high school work to be an accurate reflection of their ability. The college and non-college groups differed not only on ability and socio-economic status, but also differed on social experience and attitude.

Peer groups and friends have been found to have a relationship to future plans. A great majority of the students planned to do what their friends were going to do. This trend was strongest among the college-going graduates(Little, 1958).

Findings by McDill and Coleman suggested that college plans in low status high school cliques more often stem from and lead to an achievement orientation than in the high status cliques. The college plans of the more elite group evolve from peer group and parental association.

Adolescent values, which shape academic behavior, are largely a function of peer interactions. The social background of the student cannot adequately explain the importance of peer group influence on college aspiration. It was also found that differences in college plans vary in relationship to the social climate of the school.

McDill and Coleman concluded that the loss of talent between high school and college could be decreased if ways could be found to use the school's social system to strengthen the motivation to attend college. If the "stars" or "elites" are identified and encouraged toward college, this should indirectly influence their peers to continue their educational plans (McDill and Coleman, 1964; 1965).

Many studies have indicated that the influence which parents bring to bear on the student, either directly or indirectly, is probably as great as that from any other single source. The social position of the parents exerts an important influence on the educational aspirations of their children (Beezer and Hjelm, 1961; McDill and Coleman, 1965).

Little and others have indicated a relationship between the educational level of the parents and college attendance. Survey reports suggested that college attendance by the mother could be more influential than that of the father (Little, 1958; 1959; Elder, 1963). McDill and Coleman contended that in the senior year of high school, high school status had a greater effect on college intentions than did either the mother's or father's level of formal education (McDill and Coleman, 1964; 1965).

Parents' occupational level has also been found to have bearing upon college-going behavior. Elder found that the parents of 62.7 per cent of the students who entered college were white-collar workers while the parents of only 27 per cent of those who entered were farm workers (Elder, 1963).

Conditions under which boys are more likely to attend college included: the father is foreman rather than a worker; the mother is employed as a white-collar worker; the mother married downward; the father is dissatisfied at his job; both parents apply college pressure early (Cohen, 1965).

Henry's Missouri study revealed that the student's high school classification and the educational and occupational level of the parents were related to the college-going behavior of the group. Chi-Square tests for all of these variables were significant at the .01 level with the exception of the occupational level of the mother which was significant at the .02 level (Henry, 1965).

In recent years, there has been many studies which support the idea that a person's achievement and actions are effected by his self-image or self-concept (Brookover, 1962). The positive-negative aspects of self-esteem have been the central theme of many recent self-image studies. Emphasis has been on the correlation between self-image or self-confidence and academic performance (Lavin, 1965).

McDavid found that low achievers have lower self-concept than do high achievers. He suggests that higher academic performance may result in a higher self-image which, in time, will possibly increase motivation and thereby result in higher future grades (McDavid, 1959). Brim, in a college self-concept study, reported that students with equal measured intelligence, but lower self-estimates of their own intelligence, do not perform as well academically as do students with equal measured ability, but higher self-concepts of their own intelligence (Brim, 1954).

In an elementary school study, Reeder concluded that students with higher self-concepts perform better academically than do students with lower self-images (Reeder, 1955). Coopersmith's elementary school study found a correlation of .36 between academic performance and positive self-concept (Coopersmith, 1959). In a study of college students with higher than average intelligence, Stevens reported that the high achievers have greater respect for their own abilities than do the low achievers (Stevens, 1956). Lum, in an investigation of under- and over-achieving female college students, reported that over-achievers have greater self-confidence than do the under-achievers (Lum, 1960). Renzaglia's doctoral study found a significant relationship between high academic performance and a positive self-image (Renzaglia, 1952).

In a check-list type of bright under-achieving high school students, Shaw reported that, for girls, academic performance was not related to a positive self-concept, but that, for the boys, there was a correlation between higher academic achievement and a positive self-concept (Shaw, 1960).

Brookover concluded that: "The evidence that self-concept of ability as measured by the scale developed in this study is related to school achievement is sufficient to justify further research." It seems clear that self-concept of ability functions independently of measured intelligence in predicting school achievement.

In summary, it may be said that past research does indicate that there is a definite relationship between a positive self-concept and high academic achievement.

The concept of motivation has also been useful in the explanation of behavior. However, past attempts to empirically identify and measure motivation have not met with overwhelming success.

In 1947, McClelland and his colleagues (Atkinson, Clark, and Lowell) began research studies designed to establish techniques for the measurement of human motives. McClelland and his co-workers, following Freud and Murray's work (1943), used fantasy as their measure of motivation. McClelland developed a projective technique in which the individual is presented a series of pictures and asked to compose a story in response to each of them. To McClelland, these goal-orientated responses to the picture stimuli represented a symbolic expression of the need of an individual to achieve or to overcome an obstacle or to reach a goal. When evaluated quantitatively, these projective responses provide a useful index of the strength of this need to achieve. Thus, the measurement of need achievement, according to McClelland, is the measurement of the need of an individual to achieve or perform according to some standard of excellence. Although McClelland and his associates recognized the practical value of this exchange, their chief concern was theoretical. As the result of this, the early development of need achievement was limited to experimental situations. Succeeding endeavors to relate need achievement to practical performance criteria have met with diverse and conflicting results.

While Morgan (1952) found that male college non-achievers have significantly lower need achievement scores than college male achievers, research by Parrish and Rethlingshafer (1954) resulted in non-significant differences in need achievement for comparable groups.

In another study by Weiss, Wertheimer and Grossbeck (1959), the Thematic Apperception Test (TAT) correlated at .55 with aptitude and at .34 with grades. McClelland (1953), in a sample study of male students, found a correlation of .39 between achievement motivation and grades. Rosen (1956), in a male high school study using the TAT, found that achievement motivation and grades were directly related.

Mitchell, (1961), using a sample of college females, found that grades did not correlate with the TAT. Hills (1958), using first year law students in a multivariable study, found no correlation between TAT scores and several criteria of academic success.

The early research of McClelland and his associates on this projective measure of need achievement was performed in experimentally controlled situations. The criterion of validity was whether or not high need achievement resulted in superior performance on a variety of learning tasks. Lowell, in an experimental study with ability held constant, found a significant relationship ($p < .01$) between need achievement scores and increased output in scrambled word tasks by college students. Similarly, he found that the high need achievement group did significantly better ($p < .05$) on experimentally controlled addition tasks. As a result of these and other studies, McClelland concluded: The decisive criterion for determining whether a motive is involved in performance is whether or not it can produce learning. Since there is clear evidence of learning in the high need achievement group, it can be argued that the need achievement score is a measure of motivation." (McClelland, 1953)

Several studies of McClelland need Achievement Technique give indications of the reliability of this instrument. Atkinson (1950), in a study to develop an equivalent form, compared the results obtained from four new pictures with results from the four original pictures. When the Spearman - Brown Correlation formula was applied to this comparison, a reliability of .65 was found between the two forms. McClelland, using college males as subjects, also reported a reliability estimate of .78 between two forms of two pictures each. Lowell (1950) administered two equivalent forms a week apart to male college students (N=40) under neutral conditions. The product-moment correlation between the two forms was not significant ($r=.22$). However, the forms did agree (Chi-Square = 7.82, $p < .01$) in placing subjects above or below the median score. Krumboltz and Farquhar (1957), in a test-retest study using four pictures nine weeks apart, reported a correlation of .26 for a group of college students (N=169).

Lavin (1965) states that attempts to measure achievement motivation by projective measures have been inconsistent. Some studies have found projective techniques having negative correlations to performance while other studies have found a positive correlation. According to Krumboltz (1957), one reason for this inconsistency is the low reliability of the projective techniques employed. Lavin (1965) also states that studies do not indicate a close relationship between academic success and achievement motivation.

CHAPTER II

METHODS AND PROCEDURES

This chapter consists of a description of the sample, a description of the instruments used to measure the variables relevant to college attendance, a discussion of the data collection procedures, and a description of the statistical procedures used to test the hypotheses described in Chapter I.

Description of Sample

The sample of 1,698 high school seniors (850 boys and 848 girls, Class of 1964) was taken from ten high schools representative of the West Virginia portion of the Southern Appalachian Region. These ten schools were chosen in such a manner that they constituted a generally representative sample of the entire state. Graduating classes ranged in size from 23 to 474 and were located in towns whose population ranged from 210 to 85,000. The communities in which these schools were located ranged from a tiny farming hamlet through a large "coal camp" to a standard metropolitan area. They were chosen from various geographic areas of the state.

Each of the ten schools and the communities that these schools serve are described to allow the reader to draw his own conclusions as to the nature of the population to which this study can be generalized.

School 2

School 2 is located in north-central West Virginia near a fairly large city. The population of the community is 2,996 and most of the people earn a living in the coal or natural gas industries, or commute to the city to work in the glassware and electrical manufacturing industries. The school is accredited by North Central and had 704 students in grades 7 - 12. Of this number, 68 per cent were transported. There were 76 seniors (36 boys and 40 girls) of the 1964 class included in the study.

School 4

School 4 is located in a southern West Virginia community which has a population of 1,225. Farming is the major occupation in the area although some people in the community are employed by the branches of the state government. The high school had 324 students in grades 7 - 12. Fifty-five per cent of the students were transported, and there were 24 seniors (9 boys and 15 girls) in the class of 1964 included in the sample.

School 5

School 5 is located in a sparsely populated area in south-central West Virginia. The principal industries are coal, timber, and farming. The population is 475. The high school had 682 students in grades 7 - 12. Of this number, 81 per cent were transported. There were 81 seniors (40 boys and 41 girls) included in the study.

School 6

School 6 is in a small rural community located in south-eastern West Virginia and has a population of 210. Work in coal, farming, and timber constitute the major source of income for people in the area. The school had 184 students in grades 7 - 12 and of this number, 80 per cent were transported. From the graduating class of 1964, 23 seniors (10 boys and 13 girls) were used in the sample.

School 7

Located in southern West Virginia, School 7 is in a rural community with a population of 411. Timber and farming constitute the major source of income for people in the area. The high school had 334 students in grades 7 - 12; of this number, 76 per cent were transported. There were 53 seniors (25 boys and 28 girls) included in the sample.

School 9

School 9 is in the center of a large coal mining area in south-western West Virginia. The town's population is 4,185. The school is accredited by North Central and serves most of the county. Eighty-nine per cent of the students were transported. The school is organized on a 10 - 12 basis and had 2,064 students. There were 434 of the 1964 graduating seniors (229 boys and 205 girls) included in the sample.

School 10

School 10 is located in the only standard metropolitan area completely within West Virginia and is representative of the four or five standard metropolitan areas in the region. The population of the city is 84,796. Employment in this area comes mainly from chemicals, small manufacturing, and state government. The school is accredited by North Central and had 1,644 students in grades 10 - 12. Four hundred and fifty-six students (237 boys and 219 girls) were included in the sample.

School 11

School 11 is located in central West Virginia; the school serves the town and surrounding communities. Principal industries in the area are natural gas, glassware, and farming. The population of the town is 8,754. The high school had 817 students in grades 10 - 12, 68 per cent of whom were transported. The school is accredited by North Central and 150 of the seniors (67 boys and 83 girls) for 1963-64 were included in the sample.

School 12

Located in north-central West Virginia, School 12 serves the poorer, less advantaged section of the city. The population of the city is 27,477. The principal industries in the community are coal, glassware, and the manufacturing of electrical products. The high school serves grades 9 - 12 and had an enrollment of 1,234. The school is accredited by the North Central Association. About 59 per cent of the students were transported, and 224 seniors (100 boys and 124 girls) in the class of 1964 were included in the sample.

School 13

School 13 serves a town and the surrounding communities located in the eastern panhandle of West Virginia on the Maryland border. The community has a population of 7,041 and the major industries in the area are coal, lumber, and fruit. The school is organized on a 7 - 12 basis and had a student body of 1,226. It also has North Central accreditation. One hundred and seventy-seven (97 boys and 80 girls) for the class of 1964 were included in the sample.

Instrumentation

The instruments used to measure those variables related to college attendance were: The College Image Index, The Personal Data Form, The School and College Ability Test, SCAT, The Academic Self-Concept Scale, and The McClelland need Achievement Test. Each of these is described in this section of the report. A copy of all instruments except the SCAT may be found in Appendix B.

College Image Index

The College Image Index is an instrument whose primary purpose is to measure the students' impression of or opinions about college. This instrument was developed by the research staff to obtain the reaction of high school students to certain statements regarding the environment of a college. The index used in this study drew upon the College Characteristic Index, a 300-item index questionnaire widely used to measure the environmental press of college. In the College Image Index, there are 84 pairs of statements which are grouped into twelve pairs in each of the following categories: Financial, Status, Intellectual, Social, Difficulty, Independence and Vocational. Appendix B contains examples of the College Image Inventory.

The steps taken to develop this instrument were as follows:

1. The items from the College Characteristic Index were reworded to fit any college or colleges in general;
2. Additional items were obtained by asking seniors to describe college;
3. All items were categorized independently by five judges (Academic, Sex-Social, Status, Extra-curricular, and Self-development);
4. Items with unanimous or 4-1 agreement were placed in the designated categories;
5. The categories were reworded according to the insight gained by comparison of judges' reactions into:
   a. intellectual
   b. difficulty
   c. vocational
   d. independence
   e. social
   f. financial
   g. status
   h. unrelated
6. All items were categorized independently again by five judges;
7. Items having unanimous or 4-1 agreement remained in categories;
8. For categories with many items judges selected the best items to retain;
9. Items in each category were paired with an alternate item in the same category representing a different degree;
10. Pairs of items were listed in a random order;
11. The items which were paired were ordered in a random manner;
12. The instrument was administered twice to a group of seniors not in the present study (the second time was two weeks after the first);
13. The discriminating power of each item was determined by subtracting the percentage of persons in lowest 27 per cent marking it positive; and
14. Items which had less than 25 per cent discrimination on both pre- and post-test were reworded.

Personal Data Inventory

This form, developed by the research staff, contains standard items for personal and family information such as: age, sex, number of members in the family, approximately total family income, etc. Also included are items relating to future aspirations of the subject and family for college attendance such as attitude of parents toward college and how far the subject really thinks he will go beyond high school. The Personal Data Form is presented in Appendix B.

School and College Ability Test

The School and College Ability Test was developed for use in the admission placement and counselling of college students. At the high school level, this test provides a rough estimate of the high school student's aptitude for college work and has been employed for educational counselling and other special purposes. The SCAT covers a range from the fourth grade of elementary school through the college sophomore year. At each of the five levels covering this range, the tests are available in two equivalent forms, A and B. Oriented specifically toward the prediction of academic achievement, all levels yield a verbal, a quantitative, and a total score. The verbal score is based on two tests, sentence understanding and word meanings. The quantitative score is based on numerical computation and numerical problem solving. The SCAT undertakes to measure "developed abilities" and therefore reflects the nature and amount of schooling the individual has received rather than measuring "capacity". For this study, Form 2-A was used.

Academic Self-Concept

This measure is essentially the same as the Self-Concept of Ability Scales developed by Brookover. Since the scales were developed by Brookover for use with junior high school students, the wording was changed to make it appropriate for use with high school students. This test consists of eight five-choice items developed from a pre-test analysis in which a set of sixteen multiple choice questions were administered to forty-nine seventh grade students in the pre-test group of the Brookover Junior High School Study. These sixteen items, judged to be relevant to one's conception of one's ability to do well in school, were presented to the students in private interviews. Scalogram analysis of the pre-test responses to the sixteen questions produced an eight-question Guttman type scale with reproducibility of .91 (Brookover). The items were coded from 5 - 1 with the higher self-concept alternates receiving high values.

McClelland need Achievement Test

The McClelland need Achievement Test is a projective technique designed to measure need achievement fantasy. Subjects are asked to view four pictures projected on a screen and then to make up a story concerning each picture. Standard directions are used for motive arousal. The subjects are informed that this is a test of creative imagination and are encouraged to make their story vivid and dramatic, not merely a description of the picture. The procedure for scoring a story is to determine whether it contains any reference to an achievement goal. By achievement goal is meant success in competition with some standard of excellence and may be in the story either implicitly or explicitly.

Collection of Data

A sample of 1,698 high school seniors representative of the West Virginia portion of the Southern Appalachian Region was used for the study. During the 1963-64 school year all students were tested using the SCAT, the McClelland need Achievement Test, Academic Self-concept Test, and College Image Test. The tests were administered by project representatives during the spring of 1964. Students were also asked to complete a Personal Data Sheet at this time. Copies of all tests, except the SCAT, are included in Appendix B.

After the initial battery of tests was administered, the responses were scored. The results for each student, along with the available identifying data, were placed on IBM cards. Subsequent analysis of data and follow-up for the sample was done by means of IBM 7040 computer.

In the fall of 1964, a follow-up of the students in the sample was conducted to identify those students who went to college.

Since the students in the sample had been graduated in the spring of 1964, it was believed that many of them would not be living at the address they gave while attending high school. On the Personal Data Sheet, the students had been asked to include the name and address of some person who would always know their address. In most cases this turned out to be one of the parents. A questionnaire was sent to the person indicated as always knowing the student's address requesting the student's present address. At the end of three weeks, another postcard was sent to those who had not replied. A copy of this questionnaire is included in Appendix A. By this method, the address of 73 per cent of the original sample was obtained.

As the addresses were received, a questionnaire was sent to each of the students in the sample asking their present status, address, and plans. Also, they were asked for the name of the college and course of study if attending college, or the type of employment if employed. A copy of this questionnaire is in Appendix A. At the end of three weeks another questionnaire was sent to those who had not responded.

One month later the desired information had been received from 58 per cent of the original sample. Since practically all colleges require a high school transcript of classes and grades before entrance, the names of the colleges were obtained. The registrars of the colleges were asked for information of enrollment of the persons on whom information had not been received. All registrars co-operated. By this combination of methods, it was possible to identify virtually all students in the sample who were enrolled in college.

A second follow-up was made in the fall of 1965 to determine which members of the original group remained enrolled in college. The same procedure was used for the second follow-up as was used in the first follow-up study. A copy of the questionnaires is included in Appendix A.

Statistical Procedures

The important differences for statistical analysis seemed to be: (1) those that differentiated the individuals who attended college from those who did not attend, and (2) those that differentiated the individuals who attended but did not remain from those individuals who persisted in their college work.

Each variable was examined to determine if this variable was an important variable in making this differentiation. The "t" test was used to examine (1) the difference between college and non-college students and (2) the difference between college and college-persist students on (a) Academic Self-Concept scale, (b) McClelland need Achievement Test, (c) SCAT, (d) College Image Index, and (3) High School Grade Point Average. The Chi-Square test of independence was used to examine these same two differences on the socio-economic-cultural items on the Personal Data Sheet.

The second hypothesis concerning the use of multivariate combination of scores was tested by the use of a discriminant function. Two discriminant functions were used at each of the three ability levels, one to differentiate those students who did not attend college and the other to differentiate those who attended and persisted from those who attended one year or less.

In addition to these statistical tests, the students who may be considered the "talent loss" are described and compared with those who attended college. The only statistical test used in this comparison is a "t" test of difference between two groups of equal SCAT score on grade point average.

CHAPTER III

ANALYSIS AND TREATMENT OF DATA

This chapter has three main divisions. Section A discusses the nature and extent of the "talent loss". Section B discusses the ability of the variable to differentiate between (1) college attenders and non-attenders, and (2) students who persisted in college and those who did not persist. Section C discusses the interrelationship of the variables as these variables were used to differentiate between (1) high ability students who attended and those who did not attend college, and (2) high ability students who persisted and those who did not persist in college. Also, the interrelationship of variables was examined in order to make these same differentiations of the middle and low ability students.

SECTION A

Talent Loss

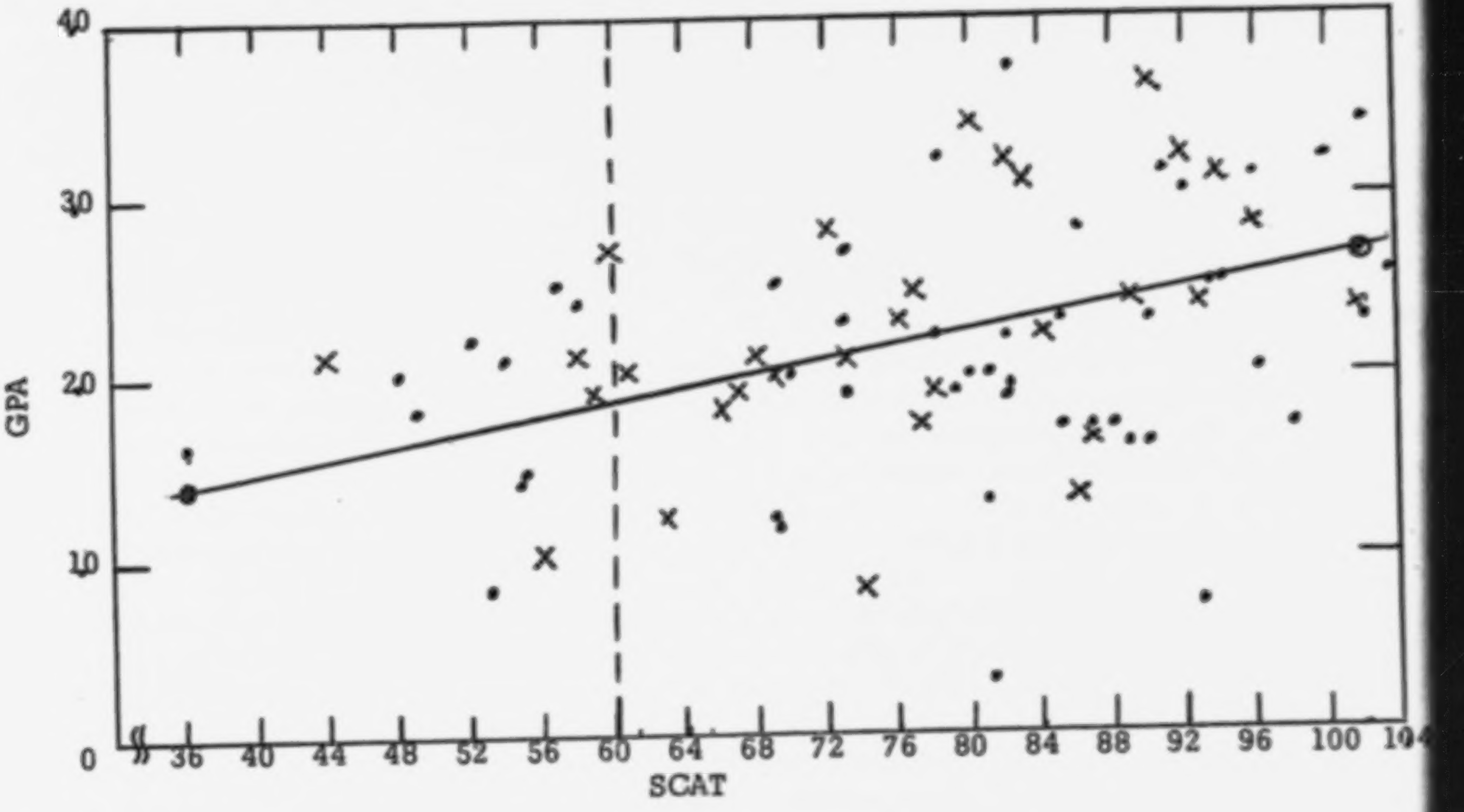
An attempt must be made to define talent loss before it is analyzed. For this study, a SCAT raw score of 60 was selected as the minimum value of determining college capability. It was believed that one scoring above this value had the ability to do college work. The score of 60 was selected because it falls at the 50th percentile on the national norms for the SCAT, and approximately one half of the high school graduates nationally attend college. Thus, one might suggest that those who go on would generally be in the top 50 per cent in ability or achievement. The talent loss was investigated at several intervals with 60 as a minimum value.

A follow-up study to verify the cut-off value of SCAT 60 was completed in the summer of 1965. Eighty-five students who went on to college were selected at random from the total sample. First year college grade point averages were requested from the colleges which the students attended. The college grade point averages were plotted against the total SCAT score for the individual.

Graph A represents this scattergram. The equation for the regression line was calculated and the line drawn on the scattergram. The correlation for the first semester college grade point average and SCAT score was .38. These data suggest, generally, that students who scored 67 or greater on the SCAT were able to achieve success in colleges where success is based upon a 2.00 or better grade point average.

Following a criterion of SCAT raw score of 60 or better, the data indicate a talent loss of 51 per cent among the 1964 high school graduates; that is, of those 1964 West Virginia high school graduates scoring in the top 50 per cent on the SCAT, 51 per cent, or one out of two, failed to go to college. This apparent talent loss is greatly compounded when one recognizes that of those students enrolled in the ninth grade in West Virginia in 1961-62, only 60 per cent graduated from high school, whereas the national average was 74 per cent. West Virginia ranked forty-fourth in the nation (NEA Research Bulletin, #43, Fall, 1965).

Graph A. PLOT OF SCAT SCORE VS. HIGH SCHOOL GRADE POINT AVERAGE FOR 37 FEMALES AND 44 MALES



F = x
M = 0

r = 0.38
y = .0185X + 0.7579

An analysis by schools as shown on Table 1 gives evidence of a large range of talent loss among high schools. School 12 shows a talent loss of 34 per cent, while School 2 shows a talent loss of 67 per cent. Common to the three schools with the smallest talent loss (10, 12, 13) is the proximity of a college. School 10 serves mostly urban students whereas Schools 12 and 13 serve rural and less advantaged students. The high schools with the largest talent loss are located in rural communities with no college nearby. The relatively small talent loss for Schools 4 and 6 (as shown on Table 1) might be attributed to the small sample from these schools.

TABLE 1. THE NUMBER AND PER CENT OF SENIOR STUDENTS ABOVE A SCAT RAW SCORE OF 60 THAT ATTEND OR DO NOT ATTEND COLLEGE BY HIGH SCHOOL

School	N Seniors with SCAT> 60	N Attend College	% Attend College	N Non-College	% Non-College	Total
2	43	14	32.6	29	67.4	76
3	31	11	35.5	20	64.5	53
9	222	89	40.1	133	59.9	434
11	80	33	41.2	47	58.8	150
4	14	6	42.9	8	57.1	24
5	34	15	44.1	19	55.9	81
6	12	6	50.0	6	50.0	23
10	295	150	50.8	145	49.2	456
13	105	62	59.0	43	41.0	177
12	134	88	65.7	46	34.3	224
TOTAL	970	474	48.9	496	51.1	1,698

Tables 2 and 3 which indicate talent loss in relation to sex shown an interesting feature of the West Virginia talent loss. College attendance for males shows that 263 out of 509 of the group attended college, or a talent loss of 48 per cent. The female group shows that 206 out of 460 attended college, or a talent loss of 55 per cent. There is no significant relationship between sex and talent loss in West Virginia, but nearly all other national and regional studies of talent loss have shown a much larger loss for females than for males.

There is but a very minor shift in rank position when the data is analyzed by school and sex.

TABLE 2. THE NUMBER AND PER CENT OF MALE STUDENTS ABOVE A SCAT RAW SCORE OF 60 THAT ATTEND AND DO NOT ATTEND COLLEGE BY HIGH SCHOOL

School	N Seniors with SCAT>60	N Attend College	% Attend College	N Non-College	% Non-College	Total
7	15	4	26.7	11	73.3	25
2	21	7	33.3	14	66.7	36
6	7	3	42.9	4	57.1	10
9	116	50	45.1	66	56.9	229
5	20	9	45.0	11	55.0	40
11	38	18	47.4	20	52.6	67
10	173	95	54.9	78	45.1	237
4	7	4	57.1	3	42.9	9
13	56	34	60.8	22	39.2	97
12	56	39	69.6	17	30.4	100
TOTAL	509	263	51.7	246	48.3	850

TABLE 3. THE NUMBER AND PER CENT OF FEMALE STUDENTS ABOVE A SCAT RAW SCORE OF 60 THAT ATTEND AND DO NOT ATTEND COLLEGE BY HIGH SCHOOL

School	N Seniors with SCAT> 60	N Attend College	% Attend College	N Non-College	% Non-College	Total
2	22	7	44.8	15	68.2	40
11	42	15	35.7	27	64.3	83
9	103	37	35.9	66	64.1	205
5	12	5	41.7	7	58.3	41
4	7	3	42.9	4	57.1	15
10	123	53	43.1	70	56.9	219
7	16	7	43.8	9	56.2	28
13	52	28	53.9	24	46.1	80
6	5	3	60.0	2	40.0	13
12	78	48	61.5	30	38.5	124
TOTAL	460	206	44.8	254	55.2	848

The question that naturally arises when the extent of the talent loss is shown is how good are the individuals who are being lost. The SCAT was used to differentiate the students of college capability, and the data was analyzed in order to find characteristics that further differentiate between the college and non-college groups.

For the above 60 groups there is a small difference in high school grade point average (Table 4), but the mean non-college grade point average of 2.55 is probably high enough for success in many colleges and universities. Several studies indicate that high school grade point averages are the best predictors of college achievement. The non-college group was able to maintain above average grades in high school and should have been able to continue to achieve at that level in college.

TABLE 4. MEAN GPA FOR COLLEGE AND NON-COLLEGE STUDENTS AT OR ABOVE SCAT 60

	College	Non-college
Number	466	485
Grade Point Average	2.99	2.55

Selective data from the Personal Data Sheet also indicate the high capability of the non-college group. Table 5 consists of the number of books read by the college and non-college groups. The significance of these values is the fact that those not going to college were doing just as much reading as those who went to college. This is another indication that the "above SCAT 60" non-college students could probably have done just as well as students who went to college. Thus, from an individual or societal viewpoint, such students really constitute a loss of talent.

TABLE 5. BOOKS READ BY COLLEGE AND NON-COLLEGE STUDENTS AT OR ABOVE SCAT RAW SCORE OF 60

Books Read	% College	% Non-college
0 - 10	40.9	40.3
10 or more	59.1	59.4

The next step in the analysis of the talent loss was to move to a higher SCAT raw score. A raw score of 73 which is equivalent to the 70th percentile in the high school graduate national norms was selected. This score was also used as a cut-off for the high SCAT group in other parts of this study. The data show, even at this high level of capability, an alarmingly large talent loss (See Table 6). The talent loss above the 70th percentile was 36 per cent. Thus, in excess of one third of the capable high school graduates in the upper one-fourth of the sample failed to continue their education by attending college.

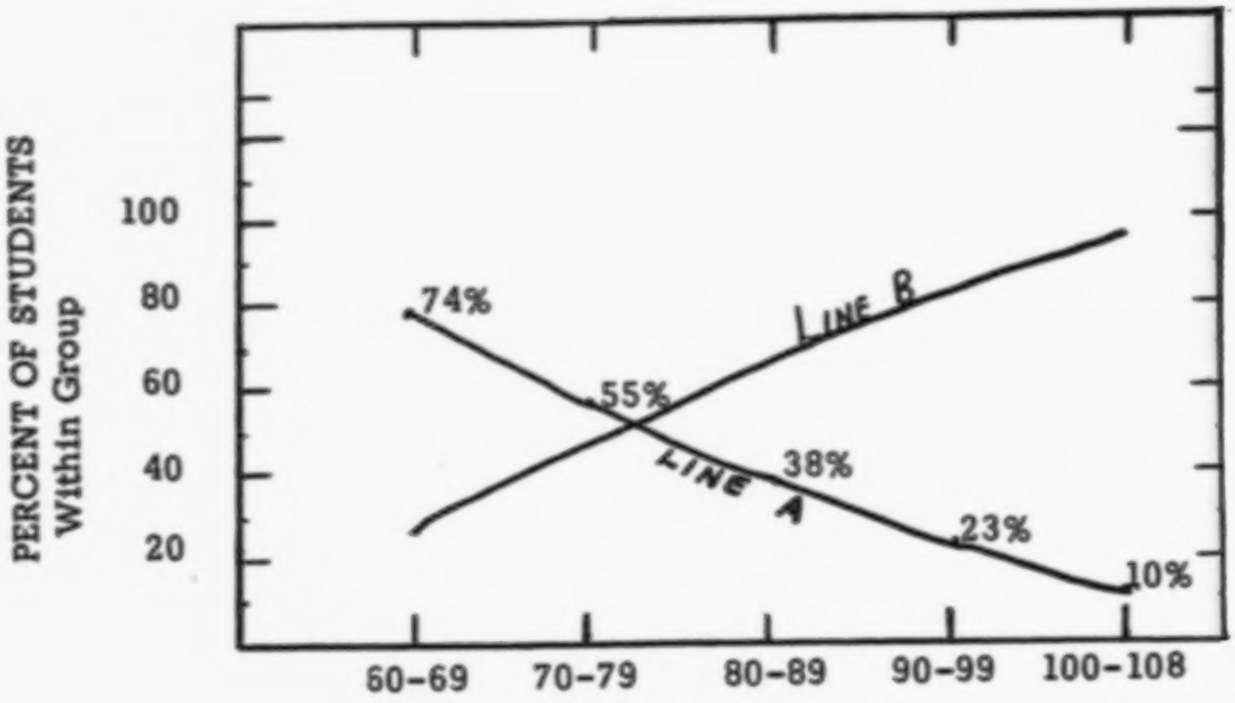
TABLE 6. NUMBER, PER CENT, AND HIGH SCHOOL GRADE POINT AVERAGE OF STUDENTS ABOVE 73 ON SCAT

	College	Non-college
Number	360	208
Per cent	63.38	36.62
High School GPA	3.10	2.74

Of course, the data show that these were potentially capable college students. The mean high school grade point average for the high SCAT non-college groups is 2.74, a figure well above average. Although the non-college high school grade point was lower than that of the college group (3.10), it remains an indication that these students could have done college work.

The talent loss, determined for ten point intervals on the SCAT and shown in Graph B, drops from a high of 74 per cent in the 60-69 interval to a 10 per cent in the 100-109 interval. Line A shows the non-college group and Line B shows the college attended for each interval. The fifty-fifty split occurs at about SCAT score of 77. Notice that per cent attending college is almost a straight line function of the SCAT score.

Graph B. PER CENT OF HIGH SCHOOL SENIORS THAT ATTEND COLLEGE AT SPECIFIED SCAT RAW SCORE CATEGORIES.



Line A - Non-college
Line B - College

Comparisons of the college and non-college students can also be made by using Tables 7 and 8. Table 7 gives the father's occupation in the left column and the number and per cent of students in each SCAT interval in the following columns. The per cent loss at each occupational level is indicated in Table 8.

In Table 7, a relatively high talent loss is seen in the managerial and professional groups. However, with this group, the switch from predominantly non-college to predominantly college occurs at an early interval. As can be expected, a large talent loss occurs in the unskilled group, but the talent loss in the skilled group is also high. This would seem to indicate the need for further investigation of this group to determine causes of non-attendance.

Investigation of Table 8 indicates a fact that should be anticipated, a decreasing talent loss with an increasing SCAT score. For the semi-skilled, unskilled, and unemployed groups, the talent loss is always higher than average for each ability group. Except for the categories with a small sample, the managerial and professional groups contain the smallest per cent of non-college students.

Mean differences for high school grade point average at each SCAT interval were investigated and the data recorded in Table 9. A "t" test for significance between college and non-college groups was run at each interval. The "t's" of 3.805 and 3.186 were significant at the .01 level. The "t's" at the 80-89, 90-99, and 100-109 intervals were not significant.

TABLE 7. NUMBER AND PER CENT OF COLLEGE AND NON-COLLEGE STUDENTS AT EACH OCCUPATIONAL CATEGORY FOR SPECIFIED SCAT RAW SCORE INTERVALS

Occupation	N/%	SCAT Intervals									
		60-69		70-79		80-89		90-99		100-109	
		NC	C	NC	C	NC	C	NC	C	NC	C
Managerial & Professional		27 11.95	19 23.46	25 17.61	34 29.31	18 23.68	44 36.06	7 20.59	33 29.46	1 33.33	13 50.00
Clerical & Sales		13 5.75	5 6.17	11 7.75	13 11.21	6 7.89	11 9.02	3 8.82	11 9.82	-- 0	3 11.54
Service		13 5.75	4 4.94	10 7.04	10 8.61	2 2.64	4 3.28	2 5.88	8 7.14	-- 0	2 7.69
Agric., Fishing, Forest & Kindred		1 .44	3 3.70	-- 0	4 3.45	-- 0	5 4.09	-- 0	-- 0	-- 0	-- 0
Skilled		54 23.89	28 34.58	30 21.13	27 23.29	12 15.79	38 31.15	8 23.54	31 27.68	-- 0	5 19.23
Semi-Skilled		22 9.73	8 9.88	7 4.93	2 1.72	11 14.47	6 4.92	3 8.82	8 7.14	-- 0	1 3.85
Unskilled		45 19.92	7 8.64	20 14.08	10 8.61	16 21.05	9 7.38	3 8.82	10 8.94	1 33.33	2 7.69
Retired		14 6.19	3 3.70	12 8.45	4 3.45	3 3.95	2 1.64	1 2.94	3 2.68	-- 0	-- 0
Unemployed		12 5.32	3 3.70	12 8.45	4 3.45	5 6.58	-- 0	3 8.82	1 .89	1 33.33	-- 0
Not Classified		25 11.06	1 1.23	15 10.56	8 6.90	3 3.95	3 2.46	4 11.77	7 6.25	-- 0	-- 0
Total Number		226	81	142	116	76	122	34	112	3	26

TABLE 8. PER CENT OF NON-COLLEGE STUDENTS IN EACH OCCUPATIONAL CATEGORY FOR SPECIFIED SCAT RAW SCORE INTERVALS

	Percent of Non-College				
	SCAT Intervals				
Occupation	60-69	70-79	80-89	90-99	100-109
Managerial and Professional	58.7	42.4	29.0	17.5	7.1
Clerical and Sales	72.2	45.8	35.3	21.4	0
Service	76.5	50.0	33.3	20.0	0
Agriculture, Fishing, Forest, and Kindred	25.0	0	0	0	0
Skilled	65.8	52.6	24.0	20.5	0
Semi-skilled	73.3	77.8	64.7	27.3	0
Unskilled	86.5	66.7	64.0	23.1	33.3
Retired	82.4	75.0	60.0	25.0	0
Unemployed	80.0	75.0	100.0	75.0	100.0
Not Classified	96.2	65.2	50.0	30.0	0

TABLE 9. MEAN DIFFERENCES FOR HIGH SCHOOL GRADE POINT AVERAGE AT EACH SCAT INTERVAL

	SCAT Interval									
	60-69		70-79		80-89		90-99		100-109	
	Col.	N-Col.	Col.	N-Col.	Col.	N-Col.	Col.	N-Col.	Col.	N-Col.
$\bar{x}$	2.62	2.34	2.84	2.60	2.94	2.79	3.32	3.14	3.54	3.60
SD	.60	.58	.62	.63	.63	.61	.59	.52	.56	.50
t	3.805		3.186		1.690		1.553		-0.2077	

The number of students with a raw score of 85 or above (top quartile) on the SCAT according to national norms fell far below the expected number. Of the 274 students in the sample, only 200 enrolled in college. Results for each of the schools are recorded in Table 10. The fact that there is such a wide variation between schools (6 and 10) seems to indicate that the problem is unequally spread.

TABLE 10. THE NUMBER AND PER CENT OF STUDENTS SCORING ABOVE 85 ON THE SCAT THAT ATTEND AND DO NOT ATTEND COLLEGE BY HIGH SCHOOL

School	Number	% of Students Above 85	Non-Col.	College	% College
2	12	16	6	6	50
4	4	17	3	1	25
5	3	4	2	1	33
6	0	0	0	0	0
7	8	15	1	7	88
9	59	14	20	39	66
10	102	22	23	79	77
11	17	11	4	13	76
12	35	16	8	27	77
13	34	20	7	27	79
Total	274	16	74	200	73

During the summer of 1965, a follow-up study was conducted to determine how the students who enrolled in college had fared during their first year. This study was done on 86 students, a 15 per cent sample of those attending college, enrolled in ten different colleges. Nine of these were smaller liberal arts and teachers colleges (less than 2,500 students) and the other was the state university.

A letter was sent to each of the nine college registrars asking for the grade point averages of the selected students, and all nine registrars replied. A member of the project staff obtained the grade point averages from the state university. The grade point averages were then compared to the SCAT scores and the results of this comparison are contained in Table 11. Apparently those scoring above 60 on the SCAT were capable of doing college work in most cases. Less than one-third of those scoring below SCAT 60 were able to do satisfactory work.

There seems to be some self-selection on the basis of ability and the college attended. Only a small percentage (20 per cent) of those scoring below the SCAT score of 80 went to the state university. Of those scoring above SCAT 80, a total of 59 per cent went to the university; an overwhelming 71 per cent of those scoring above SCAT 90 went to the university.

One of the first steps in solving the problem of "talent loss" is to determine what factors will differentiate the student who attends from the student who does not attend. This determination can be made for students with different degrees of ability to profit from the experience of attending college.

TABLE 11. COMPARISON OF SCAT SCORES AND GRADE POINT AVERAGES

SCAT scores	Total	GPA 1.00		GPA 1.00-1.99		GPA 2.00-2.99		GPA 3.00		Other		Small College	University
	N	N	%	N	%	N	%	N	%	N	%	%	%
100-105	4	0		0		1	25	3	75	0		50	50
95- 99	4	0		1	25	2	50	1	25	0		0	100
90- 94	9	1	11		33	3		5	56			33	67
85- 89	9	0	0	6	66	3	33	0	0	0		56	44
80- 84	15	1	7	4	27	5	33	4	27	1 w/f		47	53
75- 79	7	0	0	3	43	3	43	1	14	0		71	39
70- 74	8	1	13	1	13	4	50	0	0	1w/f, 1 w/p		87	13
65- 69	8	0	0	4	50	3	38	0	0	1 w/f		75	25
60- 64	5	0	0	1	20	2	40	0	0	1 w/f, 1 w/p		100	0
55- 60	8	1	13	4	50	3	37	0	0	0		87	13
50- 54	3	1	33	0	0	2	67	0	0	0		67	33
45- 49	2	0	0	1	50	1	50	0	0	0		100	
40- 44	2	0	0	0	0	1	50	0	0	1 w/f		100	
35- 39	2	0	0	1	50	0	0	0	0	1 w/p		100	
Totals	86	5	6	26	30	33	38	14	16	8	9	64	36

SECTION B

Relationship of Variables to College Attendance and Persistence

This section includes a discussion of Academic Self-Concept, McClelland need Achievement, College Image Index, Personal Data Inventory, and the School and College Ability Test (SCAT), as measures which may aid in making the appropriate differentiations.

Academic Self-Concept

The more appropriate question may be the difference in self-concept for individuals in three different categories of ability: high, middle, and low. In this research, the High SCAT group has been defined as those students who achieved a SCAT score of 73 or greater, above the 70th percentile. As previously stated, 208 out of 568 (37 per cent) of those high ability students did not attend college. A highly significant "t" value of 8.96 was found for the difference between the means of the college and non-college high ability groups on the Brookover Academic Self-Concept, suggesting a relationship of academic self-concept to college attendance. (See Table 12)

Those students who achieved a raw SCAT score of greater than 53 (the 33rd percentile) and less than 73 (the 70th percentile) were defined as the Mid SCAT group. Out of 560 students in this middle ability group, 140 attended college. A "t" value of 5.87 on the Brookover Academic Self-Concept was found for the difference between the means of these two groups. This value was significant beyond the .01 level. Although this "t" value is somewhat lower than that of the high ability group, still it is indicative that the college group has a higher academic self-concept than the non-college group.

The Low SCAT group was defined as those students who attained a raw SCAT score of 53 or less (below the 33rd percentile). Previously we had defined a student who achieved a raw SCAT score of 60 or above as being capable of college work. Therefore, as can be anticipated, the college group at this level consisted of only 47 students as compared to 499 in the non-college group. A "t" value of 6.12 was found in the Brookover Academic Self-Concept between the means of these two low ability groups, again suggesting the relationship of academic self-concept to college attendance.

The college group of students was further subdivided into those who attended but did not persist in college and those who persisted or completed the first year of college and began the second year. Of the 360 students in the High SCAT group, 265 (75 per cent) of these high ability students persisted in college. A "t" value of 5.37 was computed between the means of the college dropouts and those who remained enrolled, and was found significant beyond the .01 level. This offers further evidence that a higher academic self-concept is beneficial to college success.

In the Mid SCAT group were 140 students who attended college and only 84 of them persisted in their attendance. A "t" value of 5.60 was found for the difference between the Brookover Academic Self-Concept means for these two groups, which was significant beyond the .01 level, and in confirmation of the earlier findings.

Of the Low SCAT group, 14 out of the 47 students persisted in their college attendance. A non-significant "t" value of .84 was found for the difference between the means for these two groups. This would indicate that those in the Low SCAT college-persist group did not have a higher academic self-concept than those who attended college but did not persist in their attendance.

TABLE 12. BROOKOVER ASC AS A VARIABLE IN THE ANALYSIS OF COLLEGE VERSUS NON-COLLEGE AND COLLEGE VERSUS COLLEGE-PERSIST BY SCAT LEVELS

SCAT Level	$\bar{x}c$	$\bar{x}nc$	SD_c	SD_{nc}	t
High SCAT Brookover ASC	32.1838 N = 360	29.3413 N = 208	3.4982	3.8616	8.96**
Mid SCAT Brookover ASC	28.4929 N = 140	26.4500 N = 41	3.1083	3.6980	5.87**
Low SCAT Brookover ASC	26.9362 N = 47	23.5551 N = 499	3.1305	3.5796	6.12**
	$\bar{x}p$	$\bar{x}cp$	SD_c	SD_{cp}	t
High SCAT Brookover ASC	30.9368 N = 95	32.6325 N = 265	3.2543	3.4757	5.37**
Mid SCAT Brookover ASC	27.6429 N = 56	29.0595 N = 84	3.1184	2.9873	5.60**
Low SCAT Brookover ASC	26.3030 N = 33	28.4286 N = 14	2.6749	3.6944	.84

* Significant at .05 level
** Significant at .01 level

In summary, the evidence in this report supports the belief that a higher academic self-concept correlates positively with persistence and success in college. Therefore, it may be suggested that an academic environment which enhances a student's academic self-concept may well improve his academic achievement and tend to improve his chances of attending college; and once in college, it may improve his chances of academic success.

The results of other comparisons of college and non-college students are recorded in Table 13. The results clearly indicate that the students who attend college have a significantly higher academic self-concept than those who do not attend college. The "t" value of 24.3 was significant beyond the .001 level.

TABLE 13. COMPARISON OF ACADEMIC SELF-CONCEPT SCORES OF COLLEGE AND NON-COLLEGE STUDENTS

	College	Non-College
Number	549	1,144
Mean	31	26
t Ratio 24.329		
Standard Error ...... .209		
P .... < .001		

McClelland need Achievement

All seniors from the selected high schools were tested using the McClelland need Achievement Test. This test, described earlier in this report, is a projective technique designed to measure need achievement fantasy. The purpose of this portion of the study was to examine the relationship between achievement motivation and college attendance. The results which are recorded in Table 14 indicated that the group attending college had a significantly higher achievement motivation than did the non-college group. The obtained "t" value of 6.27 was significant beyond the .001 level.

TABLE 14. COMPARISON OF McCLELLAND n ACHIEVEMENT SCORES OF COLLEGE AND NON-COLLEGE STUDENTS

	College	Non-College
Number	549	1,125
Mean	9.1	7.6
t Ratio 6.277		
Standard Error .... .229		
P ....< .001		

When the McClelland data was analyzed according to the ability groups as determined by the School and College Aptitude Test results, this significant difference was not as noticeable. (See Table 15) In the High SCAT group, 360 students (or 65 per cent) attended college while 208 did not. A "t" test for the difference in need Achievement means gave a value of 2.97 which was significant at the .05 level. These results would suggest that those who attended college appeared to have a greater need to achieve than those who did not attend college. As we follow the High SCAT college group, this need to achieve seemed to further distinguish between those who dropped out of college and those who persisted. An obtained "t" value of 2.20 between the two groups was significant at the .05 level. These findings would suggest that those who persisted in college had a greater need to achieve than those who dropped out.

There were 560 students in the Mid SCAT group which was defined as those who achieved a raw SCAT score of greater than 53 and less than 73. Out of this number, 140 students attended college. A "t" test for the difference between the means of these two groups gave a result of .42 which was not significant. Of the 140 students in the college group, only 84 (or 60 per cent) persisted in college. A "t" test for the difference between the means was .19 and was not significant either.

No significant differences were found between the Low SCAT college and non-college students who scored below 53 on SCAT. The "t" value of 1.89 for the difference in means was not significant. Out of the 546 seniors in this group, only 47 (or 8.75) per cent) students attended college, and of these students 14 persisted in college. Again, a "t" ratio of .19 was found to be a non-significant difference in need Achievement between those who dropped out of college and those who persisted.

In summary, we may say that there is some evidence that those youngsters of high ability who attend college have, in general, a higher need Achievement than those who do not attend college. This is not true of the findings derived from the middle and low ability groups. Evidence from the Mid and Low SCAT groups indicates that there is no significant difference in need Achievement between those who attend college and those who do not, and that there is no significant difference in need Achievement between those who persist in college and those who do not.

TABLE 15. McCLELLAND n ACHIEVEMENT TEST AS A VARIABLE IN THE ANALYSIS OF COLLEGE VERSUS NON-COLLEGE AND COLLEGE VERSUS COLLEGE-PERSIST BY SCAT LEVELS

SCAT Level	$\bar{x}c$	$\bar{x}nc$	SD_c	SD_{nc}	t
High SCAT n Achievement	9.5905 N=360	8.5048 N=208	4.3539	4.4090	2.79**
Mid SCAT n Achievement	8.1643 N=140	7.9808 N=420	4.6405	4.0592	.42
Low SCAT n Achievement	8.2553 N=47	7.0160 N=499	3.9534	4.4292	1.89
	$\bar{x}c$	$\bar{x}cp$	SD_c	SD_{cp}	t
High SCAT n Achievement	8.7518 N=95	9.9053 N=265	4.2966	4.3402	2.20*
Mid SCAT n Achievement	8.0714 N=56	8.2262 N=84	5.0339	4.3888	.19
Low SCAT n Achievement	8.0000 N=33	8.8571 N=14	3.8079	4.3652	.66

* Significant at .06 level
** Significant at .01 level

College Image Index

In order to determine whether or not there was a significant difference between the college and non-college groups in response to the College Image Index, a "t" test was applied to the difference between the means of the two groups. Each sub-scale score, except for Vocational, was found to be significant beyond the .01 level (See Table 16). The Vocational category was significant.

In regard to Finances, a "t" value of 11.38 for the difference between the means of the two groups was found. The non-college group apparently viewed college as a greater financial burden than did the college group.

The concept of Independence, with a "t" score of 10.65 for the difference between the means, was the second greatest distinguishing factor between the two groups. The findings suggest that those who perceived college as a way of achieving independence were more likely to attend.

The third ranking variable was Difficulty with a "t" score of 4.16. According to the data, the non-college students did not conceive of college as being as difficult as did the college students.

The Intellectual and Cultural aspects of college life, with a "t" score of 4.12, was the fourth ranking variable between the two groups. The findings suggest that non-college students did not conceive of college as being as intellectually and culturally stimulating as did the college-bound students.

The Social aspects of college life, with a "t"score of 2.79, was the fifth ranking variable between the two groups. According to the data, the non-college group did not perceive the college environment as being as fun-loving and enjoyable as did the college group.

The influences of college on an individual's socio'economic status was the sixth ranking variable. The "t" score of 2.62 indicates that the college group perceived college as having a greater influence upon an individual's socio-economic status than did the non-college group.

The last-ranking variable, with a "t" score of 2.28, was the Vocational aspect of college attendance. The data would indicate that the non-college students tended to attach more importance to the vocational aspect of college life than did the college students.

TABLE 16. COLLEGE VERSUS NON-COLLEGE BY COLLEGE IMAGE "t" RATIO

College Image Categories	"t" ratio	
Financial	11.38	Non-College > College
Independence	10.65	Non-College < College
Difficulty	4.16	Non-College < College
Intellectual	4.12	Non-College ∠ College
Social	2.79	Non-College ∠ College
Socio-Economic Status	2.62	Non-College ∠ College
Vocational	2.28	Non-College > College

A sample follow-up study indicated that those who scored above 60 on the SCAT had, in general, the ability to attend college. Comparisons were then made between the above 60 raw score college and non-college groups on the basis of information obtained from the College Image Index. The first ten College Image items were then ranked in descending order according to the differences between the two groups. The differences were expressed in terms of percentage. (See Table 17) Out of 1,698 students, 970 scored above a raw score of 60 on SCAT. Of this number, 474 (or 48.87 per cent) entered college while 496 (or 51.13 per cent) did not.

TABLE 17. COLLEGE IMAGE ITEMS RANKED

Rank	CI Items #	% Diff.	% Col.	% Non-Col.	
1	2 A	21.6	49.7	28.1	Most students don't hold part-time jobs while attending college.
	B	21.4	50.3	71.7	Most students do hold part-time jobs while going to college.
2	57 A	14.8	64.1	49.3	It is almost impossible to get a decent job if you don't go to college.
	B	14.8	35.9	50.7	You can get a job whether or not you go to college.
3	16 A	14.5	33.5	48.0	Even if you had the money, most students would really prefer to go to college near their home.
	B	14.7	66.5	51.8	One of the things students like best about college is that they can live away from home.
4	8 A	12.5	35.9	48.4	The most useful part of college is the part that helps you to earn a living.
	B	13.2	64.1	50.9	The part of college that doesn't help you to earn a living is just as useful.
5	53 A	12.0	81.0	69.0	You don't need much spending money to be popular in college.
	B	11.8	19.0	30.8	You need a good bit of spending money to be popular in college.
6	68 A	11.5	79.9	68.4	Most high school students go to college even when they don't know what they want to do for their life's work.
	B	11.7	19.7	31.4	Most high school students who haven't chosen their life's work feel that they should postpone going to college.
7	70 A	11.5	53.6	65.1	Students are aided in preparing for examinations because professors usually let them know what to study and how to prepare for exams.
	B	11.5	46.4	34.9	Students are handicapped in preparing for examinations by not knowing what will be expected of them.

TABLE 17. COLLEGE IMAGE ITEMS RANKED (Continued)

Rank					
8	63 A	11.3	93.0	81.7	Nearly all your time in college is taken up with studying and preparing assignments.
	B	11.1	7.0	18.1	Homework doesn't take up much of your time.
9	3 A	9.8	6.6	16.4	The chief reason students drop out of college is financial.
	B	10.0	93.4	83.4	The chief reason students drop out of college is poor grades.
10	14 A	7.9	92.1	84.2	You have a better chance of being somebody if you go through college.
	B	7.5	7.9	15.4	A person who does not go to college has as much chance to be somebody as a college graduate does.

Item 2, a Financial item, was the best item to use in distinguishing between the two high ability groups. Of the college group, 50 per cent did not believe that most students have part-time jobs while going to college, whereas only 28 per cent of the non-college groups were so inclined. Twenty-one per cent more of the non-college than the college group felt that most students do hold part-time jobs while attending college.

The second ranked item was a Vocational item. Sixty-four per cent of the college group, compared to 49 per cent of the non-college group, felt that it was almost impossible to get a decent job without going to college.

The item which ranked third in distinguishing between the two groups was an Independence item. Forty-eight per cent of the non-college group, compared to 33 per cent of the college group, reported a preference to attend a college close to home.

The fourth ranking variable distinguishing between the two groups was another Vocational item; with 48 per cent of the non-college group as compared to 36 per cent of the college group agreeing that the greatest value of college was its contribution to earning a living. Sixty-four per cent of the college group, compared to 51 per cent of the non-college group, indicated that the non-monetary values of a college education are of equal importance.

The fifth ranked item was a Financial item; 82 per cent of the college group, but only 69 per cent of the non-college group, felt that it was not necessary to have a great deal of spending money in college in order to be popular.

Eighty per cent of the college group felt that most high school students go to college even if they have not selected their future career while only 68 per cent of the non-college group agreed with this contention. Also important was the perceived image of college Difficulty. Fifty-four per cent of the college group, as contrasted with 65 per cent of the non-college group, believed that college professors aid students in preparing for examinations. Also related to perceived college Difficulty, 82 per cent of the non-college group, as compared to 93 per cent of the college group, thought that most of one's time in college was devoted to studying and preparing assignments.

The ninth ranking item was Finance. While 16 per cent of the non-college group thought that the chief reason students drop out of college was lack of funds, only 7 per cent of the college group believed this.

Finally, in regard to social Status, the tenth ranking item, 92 per cent of the college group believed that one had a better chance of "being somebody" if one finished college, while 84 per cent of the non-college group agreed with this opinion.

These data from the College Image Index were also analyzed by the students' SCAT scores, according to the categories of college and non-college groups, and according to college and college-persist groups, as determined by a follow-up study. (See Tables 18 and 19) The comparison between college and non-college students, and between college-attend and college-persist students was made for Financial, Independence, Difficulty, Intellectual and Cultural, Social, Status, and Vocational aspects sub-scale score for each of the three ability level groups.

TABLE 18. COLLEGE IMAGE INDEX AS A VARIABLE IN THE ANALYSIS OF COLLEGE VERSUS NON-COLLEGE BY SCAT LEVELS

College Image Index	$\bar{x}c$	$\bar{x}nc$	SD_c	SD_{nc}	t
High SCAT					
Social	8.3256	8.3750	1.8629	2.0580	.94
Independence	7.2423	6.6009	1.8263	2.1934	3.74**
Intellectual	9.5181	9.2115	1.9260	1.8967	1.92
Financial	3.1268	3.7356	1.2672	1.6975	4.88**
Vocational	7.3064	7.3990	1.6968	1.8123	.65
Status	7.0195	6.7740	1.9283	1.9040	1.49
Difficulty	7.0028	6.5913	1.5621	1.6452	2.85**
	N=360	N=208			
Mid SCAT					
Social	7.9857	8.2619	2.0982	2.1211	1.50
Independence	6.5357	5.7809	1.8829	1.9807	3.68**
Intellectual	8.9857	9.1785	2.0497	1.9082	1.02
Financial	3.4748	3.9904	1.5941	1.8067	3.02**
Vocational	7.6643	7.7429	1.7032	1.7710	.65
Status	6.7698	6.8476	1.8349	1.9677	.39
Difficulty	6.8929	6.6372	1.5158	1.7519	1.41
	N=140	N=420			
Low SCAT					
Social	8.3192	7.8236	2.0228	2.1106	1.55
Independence	5.5319	5.5060	2.1554	2.0685	.09
Intellectual	9.1702	8.6526	2.1570	1.9567	1.63
Financial	3.2553	4.4398	.6080	1.9442	4.02**
Vocational	7.8936	7.7054	1.8561	1.7786	.49
Status	6.6425	6.3863	1.7538	2.0605	..11
Difficulty	6.6170	6.5070	1.5955	1.7771	..36
	N=47	N=499			

* Significant at the .05 level
** Significant at the .01 level

TABLE 19. COLLEGE IMAGE INDEX AS A VARIABLE IN THE ANALYSIS OF COLLEGE VERSUS COLLEGE-PERSIST BY SCAT LEVELS

College Image Index	$\bar{x}c$	$\bar{x}cp$	SD_c	SD_{cp}	t
High SCAT					
Social	8.4526	8.5492	1.5829	1.9556	.46
Independence	7.1684	7.2689	1.9767	1.7726	.74
Intellectual	9.5157	9.5189	1.9011	1.9385	.03
Financial	3.2446	3.0843	1.4194	1.2082	1.10
Vocational	7.5789	7.2083	1.8769	1.6195	1.85
Status	7.0632	7.0038	1.8555	1.9569	.37
Difficulty	7.0421	6.9886	1.5704	1.5618	.31
	N=95	N=265			
Mid SCAT					
Social	8.2143	7.8333	2.1296	2.0759	2.35*
Independence	6.5179	6.5476	1.9539	1.8459	.06
Intellectual	8.9643	9.4000	2.0623	2.0535	.10
Financial	3.5000	3.4578	1.8291	1.4254	.15
Vocational	7.8571	7.5357	1.6003	1.7661	1.15
Status	6.6429	6.8554	1.9765	1.7440	.75
Difficulty	6.7143	7.0119	1.6036	1.4520	1.35
	N=56	N=84			
Low SCAT					
Social	8.6364	7.5714	2.0739	1.7415	5.84**
Independence	5.0000	6.7857	2.0767	1.8472	2.72**
Intellectual	9.1515	9.2143	2.0785	2.0821	.09
Financial	3.1515	3.5000	1.5637	1.7431	.66
Vocational	7.8485	8.0000	1.8221	2.0000	.25
Status	6.2727	6.7857	1.5057	2.2593	.89
Difficulty	6.4848	6.9286	1.6793	1.3848	.85
	N=33	N=14			

* Significant at the .05 level

** Significant at the .01 level

Finance. In the High SCAT groups, the non-college group perceived college as more of a financial burden than did the college group. A "t" test for the difference between the means was 4.88 which was significant beyond the .01 level. In the High SCAT college group, 265 of the 360 students persisted in college while 95 students dropped out. A "t" test for the difference between the means for these two groups was 1.10 which was not significant. This would suggest that for the high SCAT group, finances were perceived as more of a problem only to the college drop-out group.

In the Mid SCAT group, the non-college students also perceived college education as being a greater financial burden than did the college students. A "t" test for the difference between the means was 3.02 which was significant at the .01 level. Of the 560 students in the Mid SCAT group, 140 students entered college but only 84 per cent of them persisted in college. A "t" test of .15 indicated that there was no significant difference in their views of the financial burden of college.

A "t" value difference of 4.02 was found between the Low SCAT college and non-college group. This was significant at the .01 level and would suggest that the non-college students perceived college as a greater financial burden than did the college students. Fourteen students out of the 47 Low SCAT college group persisted in college. A "t" value of .66 was found for the difference between the means of these two groups. This value was not significant and indicated that the Low SCAT college dropouts did not perceive college as being any more of a financial burden than did the Low SCAT college-persist group.

One might summarize by saying that regardless of ability, the non-college students in this study perceived college as being more a financial burden than did the college student. The data also indicated that the financial position of the family was a greater determinant of who would or would not attend college than was academic ability.

Social. An Analysis of the Social aspects of college image as viewed by the High SCAT college and non-college groups show no appreciable difference between the two groups. On the other hand, the obtained "t" value of 2.35 between the means of the Mid SCAT college-dropout and college-persist groups suggested that the college-dropout group tended to view college as being more socialable than did the college-persist group. Similarly, a significant "t" value of 5.84 for the Low SCAT groups suggested that the Low SCAT college-dropout group viewed college as being more sociable than the Low SCAT college-persist group.

In summary, the High SCAT students, whether or not they attended college, envisioned the social aspects of college as being about the same. However, since the data indicated that the Mid and Low SCAT college-dropout groups perceived college as being more socialable than did the Mid and Low SCAT college-persist groups, one might consider the possibility that those who persisted in college devoted less time to the social aspects of college.

Independence. In the High SCAT group, the Independence factor appeared to be positively related to college attendance. A "t" value of 3.74, significant beyond the .01 level, was found between the means of the two high ability groups. The data would suggest that while the high ability college group tended to perceive college as a way of gaining independence, the high ability college-dropout group might have dropped out of college for reasons other than the independence factor.

In the Mid SCAT group, a significant "t" value of 3.68 was found for the difference between the means of college (140 students) and non-college (420 students) groups. However, no significant difference was found between the means of the college-dropout and the college-persist groups within the Mid SCAT group. Again, this would appear to suggest that college attendance is definitely related to perception of college as a place to gain independence.

In the Low SCAT group, while there was no significant difference between the means of the college and non-college groups, it is interesting to note that the difference between those who persisted in college and those who did not was significant at the .01 level.

In conclusion, it appears that Independence, as a college image factor, is positively correlated with college attendance amongst the high and average ability students; but it is not an important factor in distinguishing between those who attend and do not attend college amongst the low ability group. The data also seem to indicate that while the independence factor is not instrumental in determining who will and will not persist in college within the High and Mid SCAT groups, the opposite appears to be true when one considers the Low SCAT college group. Here, independence does appear to be a significant factor in determining who will or will not persist in college.

Intellectual. The findings show that the High SCAT college and non-college groups had approximately the same perception of the Intellectual and Cultural aspects of college life. The difference between the means of these two groups was not significant. The difference between the means of the High SCAT college-dropout and college-persist groups was a similarly non-significant "t" value of .03. Similar conclusions were reached in respect to the Mid and Low SCAT college and non-college groups, and for the college-dropout and college-persist groups.

The foregoing would suggest that Intellectual-Cultural image factor does not distinguish between the college and non-college groups nor between the college-dropout and college-persist groups.

Vocational. An analysis of the College Image Vocational aspect indicates that there are no significant differences among the various ability groups as to the importance they attach to college attendance. One could hypothesize that the majority of students, regardless of academic ability and future vocational plans, may see college as an important step in preparing for a future vocation; but that many of these same youngsters do not see college within their realm of possibilities.

Status. The data indicates that both the High SCAT college and non-college groups had approximately the same perception of the status that was to be gained by attending college. A "t" ratio of 1.49 failed to distinguish between the means of these two groups, and a non-significant "t" value of .37 between the means of the High SCAT college-dropout and college-persist groups suggest that both groups viewed the status attainment of college attendance in similar fashion.

A "t" ratio of .39 between the means of the Mid SCAT college and non-college groups indicates that both groups had a similar perception of the status to be gained by attending college. Similarly non-significant were the "t" ratio of .11 between the means of the Low SCAT college and non-college groups, and the "t" value of .89 between the means of the Low SCAT college-dropout and college-persist groups.

From this data it may be inferred that Status, as a college image factor, does not distinguish between the college and non-college students, nor between those who persist in attendance and those who drop out. In summary, the data would seem to suggest that reasons other than status attainment are influential in determining who will or will not attend college.

Difficulty. Perceived images of college Difficulty offer some relevant information pertaining to the differences between the college and non-college groups. (See Tables 18 and 19)

In the High SCAT groups, a "t" test of 2.85 was significant at the .01 level, suggesting that the High SCAT college group perceived college as being more difficult than the High SCAT non-college group. As we follow the High SCAT college group, we see that 265 out of 360 students persisted in college. A "t" test for the difference between the means for these two groups yielded .31, which was not significant. It would appear that those who continued to attend college did not perceive college as being more difficult than did those who dropped out.

In the Mid SCAT group, a "t" test for the difference between the means of the college and non-college groups relevant to perceived image of college difficulty was 1.41, which was not significant. Within the Mid SCAT group, there were 140 students who entered college; 84 of these persisted in college. A "t" test for the difference between the means of those Mid SCAT students who persisted and those who dropped out was 1.35, which was not significant. These findings would suggest that those among the Mid SCAT group who did not persist in college dropped out for reasons other than their perception of academic difficulty.

A non-significant "t" value of .36 was found for the difference between the means of the Low SCAT college and non-college groups, in respect to perceived image of college Difficulty, suggesting that both the Low SCAT college and non-college students perceived college as being about equally difficult. Fourteen students of the 47 in the low ability group persisted in college. A non-significant "t" value of .85 would indicate that there was no significant difference in the perception of college difficulty between the Low SCAT college-dropout and college-persist groups.

We may summarize by saying that the data indicate that the high ability and/or average ability students perceive college as being more difficult than do the non-college students of high and/or average ability. The data also suggest that for the Low SCAT students, reasons other than college difficulty may be more influential in determining college attendance and non-attendance.

Personal Data Inventory

These data were sought because research findings indicate that such sociological factors as family life, family size, economic status, peer groups, and other social factors do have an effect upon the educational aspirations of students (Lavin, 1965). In an effort to determine the extent to which socio-economic factors contribute to talent loss in Appalachian Region, a personal data information form was administered to approximately 1,692 graduating seniors from ten high schools representing the West Virginia portion of the Southern Appalachian Region. This form, presented in Appendix B, contained such standard items for personal and family information as: age, sex, number of members in the family, approximate total family income, and others. Also included were items relating to future educational aspirations of the subject and of the family for college attendance such as attitude of parents toward college and how far the subject actually expected to advance educationally after high school graudation.

The Chi Square test for independence was computed for college and non-college groups' responses. This was done in order to determine whether or not the personal data factors were related to college attendance. Because the Chi Square values for the different questions were not based upon the same number of degrees of freedom, an index value was used to adjust and equate the factors in order that these factors could be ranked. (See Appendix B) Significant differences were found to exist between the college and non-college groups in respect to all of the factors examined with the single exception of the number of books read by the students.

If one considers only those students who have a raw SCAT score of 60 or above, the ten most significant differences between college and non-college groups as indicated by information received from the personal data forms are listed in Table 20.

TABLE 20. DIFFERENCES BETWEEN COLLEGE AND NON-COLLEGE STUDENTS WITH A RAW SCAT SCORE OF 60 OR ABOVE AS TO PERCENT ANSWERING PERSONAL DATA QUESTIONS IN DESIGNATED MANNER

Rank	Difference in Percent	Question Number	Designated Answer *
1	62.7	29	Expected to attend college
2	46.3	28	Desired to attend college
3	35.5	30	Had close friend planning to attend college
4	30.9	14	Mother had at least high school education
5	27.0	8	Had two or fewer siblings
6	22.4	23	Subscribed to three or more magazines
7	21.7	15	Father had at least high school education
8	21.1	18	Family had income of more than $5,000
9	18.8	31	Parents encouraged college attendance
10	12.4	17	Mother employed outside home

* The designated answer is that answer that indicated that one should predict that the student would attend college.

Educational Expectation was the greatest distinguishing factor between the two high ability groups. Of the two groups, 63 per cent more of the college group than of the non-college group (or "talent loss" group) indicated that they expected to go on to college. Educational Aspiration ranked second in distinguishing between the two groups. When asked how far they would like to go on in school if they could do so, 46 per cent more of the college group than of the non-college group replied that they would like to graduate from college. Plans of Their Best Friend ranked third as a significant factor in differentiating between the two groups. A comparison revealed that 36 per cent more of the college group than of the non-college group stated that they had best friends who planned to go on to college.

An analysis of the variable of Mother's Education showed that 31 per cent more of the college group than of the non-college group had, at least, a high school education. The Number of Siblings was the fifth ranking variable. In the college group. 75.7 per cent had between zero and two siblings while only 49 per cent of the "talent loss" group reported having this few brothers and sisters. In other words, 27 per cent more individuals in the college group than in the non-college group came from small families. Family Magazine Subscription was ranked sixth as a distinguishing feature between the two groups. Of the college-bound families, 38 per cent subscribed to two or more magazines while 60 per cent of the non-college families subscribed to two or fewer. In summary, then, 22 per cent of the "talent loss" families subscribed to fewer magazines than did the college group families.

Father's education was the next ranked variable. A comparison of the fathers' education revealed that 22 per cent more of the college group than of the non-college group stated that their fathers had been graduated from high school.

Family Income also was significant in distinguishing between the two groups. In the college group, 25 per cent had family incomes of $5,000 or less while 46 per cent more families of the non-college group fell into the lower bracket than did families of the college group.

An examination of Parental Attitude toward college showed that 94 per cent of the parents of the college group had encouraged their children to go on to college while only 75 per cent of the "talent loss" parents reportedly had encouraged their children to attend. In other words, 19 per cent more of the college group had received parental encouragement to attend college than did the non-college group.

Mother's Employment was the tenth ranking variable. The mothers of 47 per cent of the college group were employed outside the home while only 35 per cent of the mothers of the non-college group had outside employment. Thus, outside employment was held by 12 per cent more mothers of the college group than of the non-college group.

The data from the College Expectation and Mother's Education were also analyzed by the SCAT results, according to the categories of college and non-college groups and according to college-dropout and college-persist groups as determined by a follow-up study. (See Tables 21 and 22)

The comparisons between college and non-college students, and between college-attend and college-persist students, were made for both College Expectation and Mother's Education values for each of the three ability level groups.

In the High SCAT group, students in the college group were more likely to indicate that they intended to finish college than were the non-college group. A "t" test for the difference between the means yielded a value of 18.28 which was significant beyond the .001 level.

For the Mid SCAT group, again, those who were college-bound were found to be more expectant that they would finish college than the non-college group. The "t" test used to determine the significance of their differences yielded a value of 15.28.

In the Low SCAT group, it was similarly found that those students who attended college expected to graduate from college. Notice that in Table 21, as judged by means of .72 versus .20, students in the Low SCAT group were not as confident as the High SCAT group that they would graduate from college. Nevertheless, those who attended were more expectant to graduate than those who did not. The "t" value of 11.69 would indicate that these differences could not have been chance differences.

Mother's Education was higher for that group of high school students who went on to college than for the group who did not go for all three SCAT groups. Each of the groups that went on to college had a mean of about seven as compared to a mean of 7.6, 7.8, and 7.9 for non-college groups in High, Mid, and Low SCAT levels respectively. "t" values ranged from 6.69 to 7.56 and were all significant at the .01 level.

In summary, the value assigned to College Expectation may be said to differentiate between that group of students who attended college and that group who persisted in college for both the High and Mid SCAT groups. "t" values of 3.04 and 3.49 for Mid and High, respectively, were significant at the .01 level. However, College Expectation cannot be used to differentiate between those Low SCAT students who attended and those who persisted in college in the prediction equation. Both of these groups had stated that they planned to attend college. On the other hand, Mother's Education did not differentiate between the college-attend and college-persist groups for any ability level. All the mothers had an average of a high school education.

The School and College Ability Test (SCAT)

The seniors were divided into three ability groups which were determined by the following procedure. The mean of the total SCAT scores was computed, and those seniors whose scores were within one-half a standard deviation above and below the mean were classified the average ability or the Mid SCAT group. These were seniors whose SCAT scores were greater than a raw score of 53 and less than a raw score of 73. There were 530 seniors in this classification and of this number, 140 (or 26.4 per cent) attended college. The high ability students, or the High SCAT group, were those seniors whose raw SCAT scores were higher than one-half a standard deviation above the mean. These seniors had raw SCAT scores of 73 or above. Of the 568 seniors in this High SCAT group, 360 (or 63.4 per cent) attended college. The low ability or Low SCAT group consisted of those seniors whose raw SCAT scores were lower than one-half a standard deviation below the mean. They had raw SCAT scores of less than 53. There was a total of 538 seniors in this group; of these students only 47 (or 8.75 per cent) attended college.

On the verbal section of the SCAT, a "t" value of 3.58 between the means of the High SCAT college and non-college groups was significant at the .01 level. For these same two groups, a "t" value of 5.33 was found for the quantitative section of the test. This was also significant at the .01 level. (see Table 21)

For the total High SCAT scores, we note a "t" value for the difference in means of 5.90 which was significant at the .01 level. The above data suggest that those high ability seniors who did attend college had a better verbal and quantitative background than those who did not attend. Out of the 568 High SCAT seniors who attended college, 208 persisted in school. There was a significant difference between these groups on all sections of the SCAT which indicated that those high ability students who persisted in college had higher aptitude for college work than those who withdrew from college. (See Table 22)

A "t" value of 3.72 between the means of the Mid SCAT college and non-college groups on the total SCAT score suggested that those students of average ability who attended college had better developed academic skills than those who did not attend. (Table 21) A non-significant "t" value of .65 between the means of the total SCAT scores of Mid SCAT college-attend and college-persist groups indicated that those who were of average ability dropped out of college for reasons other than academic ability. (Table 22)

For the college and non-college Low SCAT groups, a "t" value of 3.40 on the total SCAT score was significant at the .01 level and distinguished between the two groups. Those of the Low SCAT group who attended college were better academically equipped than those who did not attend. The data indicated that there was no significant different in scholastic aptitude between the Low SCAT college-attend and college-persist groups. That is to say, the data did not find those low-ability students who persisted in college to be any better equipped academically than those who dropped out of college.

High School Grade Point Average

When the grade point average of all seniors in this sample was computed, using the familiar four-point grade point average scale, the following results were revealed. The High SCAT college group had a mean grade point average of 3.10 while the High SCAT non-college group had a 2.73 mean grade point average. A "t" value for the difference between these two means was 9.65 which was significant beyond the .01 level. (Table 21) The high ability SCAT college-attend group had a mean of 2.80 and the college-persist group had a mean of 3.20. For these two groups a computed "t" value of 4.81 for the difference between the two means was significant beyond the .01 level. The above information indicated that there was a positive correlation between grade point average and college persistence.

Of the 530 seniors in the Mid SCAT group, 140 attended college. The Mid SCAT college group had a mean grade point average of 2.59 as compared to a 2.33 mean grade point average of the non-college group. A "t" value for the difference between these two means was 4.60 which was significant beyond the .01 level. The Mid SCAT college-attend group had a mean grade point average of 2.39 as compared to college-persist mean grade point average of 2.73. A "t" value of 3.30 distinguished between mean grade point averages of the Mid SCAT college-attend and college-persist groups. This was significant at the .01 level. (Table 22)

The Low SCAT non-college group had a mean grade point average of 1.85 while the college group had a 2.16 mean grade point average. The "t" ratio for the difference between means was 3.62 which was significant beyond the .01 level. Those of the Low SCAT college group who withdrev from college had a mean grade point average of 2.16 as compared to a 2.16 mean grade point average of those who persisted in college. A non-significant "t" value of .02 was found between the two means.

In summary, the above information indicates that there is a positive correlation between college attendance and grade point average. The fact that the High SCAT non-college students and the High SCAT college-dropout students had a higher grade point average than both the Mid and Low SCAT college-persist group would indicate that there are factors other than academic ability which determine who will or will not attend college. Also, that there are variables other than grade point average which determine who will or will not persist in college.

TABLE 21. MEAN, S.D. AND "t" VALUES OF SELECTED VARIABLES FOR COLLEGE AND NON-COLLEGE HIGH, MID, AND LOW SCAT GROUPS

Variable	$\bar{x}c$	$\bar{x}nc$	SD_c	SD_{nc}	t
High SCAT					
SCAT V	47.2702	45.3413	6.1979	5.6674	3.58**
SCAT Q	39.3621	36.7981	5.8761	5.1693	5.33**
SCAT T	86.6239	82.1344	9.4183	7.3376	5.90**
HS GPA	3.0956	2.7348	.0771	.6916	9.65**
Col. Exp.	.1955	1.6510	.5347	1.3377	18.28**
Mo. Educ.	6.9526	7.6473	1.1198	.9686	7.56**
	N=360	N=208			
Mid SCAT					
SCAT V	34.3214	33.5952	5.8226	5.3936	1.41
SCAT Q	29.8071	28.7714	6.0130	5.3543	2.22*
SCAT T	64.1286	62.3595	5.4149	5.3254	3.72**
HS GPA	2.5911	2.3295	.5822	.6094	4.60**
Col. Exp.	.6643	2.1790	.9790	.9971	15.28**
Mo. Educ.	7.1070	7.7833	1.1013	.8945	7.27**
	N=140	N=420			
Low SCAT					
SCAT V	24.8511	22.9679	5.1244	6.1212	1.97*
SCAT Q	21.0638	18.6493	5.7157	5.4958	2.79**
SCAT T	45.9362	41.6172	5.2395	8.5501	3.40**
HS GPA	2.1600	1.8464	.6324	.5441	3.62**
Col. Exp.	.7234	2.3664	1.0775	.9015	11.69**
Mo. Educ.	6.9787	7.9254	1.2596	.8879	6.69**
	N=47	N=499			

* Significant at the .05 level
** Significant at the .01 level

TABLE 22. MEAN, S.D. AND "t" VALUES OF SELECTED VARIABLES FOR COLLEGE AND COLLEGE-PERSIST HIGH, MID, AND LOW SCAT GROUPS

Variable	$\bar{x}_c$	$\bar{x}_{cp}$	SD_c	SD_{cp}	t
High SCAT					
SCAT V	45.9158	47.7575	6.0734	6.1932	2.76**
SCAT Q	38.2947	39.7462	5.1999	6.0718	2.10*
SCAT T	84.2105	87.4424	8.3423	9.6687	2.27*
HS GPA	2.8009	3.2016	.7105	.6908	4.81**
Col. Exp.	.4000	.1217	.7351	.4188	3.49**
Mo. Educ.	7.1368	6.8864	1.0877	1.1258	1.80
	N=95	N=265			
Mid SCAT					
SCAT V	33.6607	34.7619	6.0461	5.6624	1.25
SCAT Q	30.1607	29.5714	6.0955	5.9825	.62
SCAT T	63.8214	64.3333	5.1455	5.6084	.65
HS GPA	2.3895	2.7255	.5621	.5591	3.30**
Col. Exp.	.9821	.4524	1.1199	.8126	2.04*
Mo. Educ.	7.2727	7.0000	1.0084	1.1512	1.48
	N=56	N=84			
Low SCAT					
SCAT V	24.8788	24.7857	4.6081	6.3752	.05
SCAT Q	20.9091	21.4286	5.7465	5.8404	.28
SCAT T	45.7879	46.2857	5.1585	5.6081	.29
HS GPA	2.1585	2.1636	.5111	.8787	.02
Col. Exp.	.8485	.4286	1.1489	.8516	1.21
Mo. Educ.	7.0000	6.9286	1.1726	1.4917	.17
	N=33	N=14			

* Significant at the .05 level
** Significant at the .01 level

SECTION C

Interrelationship of Variables

One not only wishes to know which variables distinguish between the two groups, but also how these variables should be weighted to make the greatest distinction between groups. The High SCAT students were examined to determine how the variables weight to distinguish between college and non-college and between college and college-persist groups. The Mid SCAT students were examined for these same distinctions. Finally, the Low SCAT students were examined. Each of these six distinctions will be discussed separately and then the results will be summarized.

High SCAT: College Versus Non-College

If talent loss is to be defined as failure of high quality students to attend college, then concern should be proportional to the ability of the individual student to succeed in college. Thus, it becomes clear that the students of most interest to this study, concerning talent loss, would be those in the High SCAT group.

In this study we have observed that 36.7 per cent (208 out of 568) of those students who scored in the top 30 per cent on the national norms failed to attend college. Students in this top 30 per cent are those students who have the most scholastic potential and those who, if brought to their full potential, should make a significant contribution to society. One method of gaining an understanding of these individuals was to locate those variables which, taken either singly or in combination, predicted college attendance. In addition to identifying variables, the researchers offer some possible explanations of the nature of the variables and the relationship of each to college attendance. Any insight gained in this effort should be of great importance to the counselor.

A total of fifteen variables, Mother's Education, College Expectation, SCAT Verbal, SCAT Quantitative, SCAT Total, Brookover Academic Self-Concept, College Image-Social, College Image-Independence, College Image-Intellectual, College Image-Financial, College Image- Vocational, College Image-Status, College Image-Difficulty, High School Grade Point Average, and McClelland need Achievement, were studied relative to college attendance. Intercorrelations of all variables, as well as correlations with the criterion, College Attendance, were found for all of the variables. The intercorrelations are presented in Appendix D. The Wheery Doolittle technique was then used to select the variables which were most effective in predicting college attendance.

The four most important variables found for the High SCAT group were College Expectation, Mother's Education, High School Grade Point Average, and College Image-Financial in that order. A discriminant function on the variables revealed that College Image-Financial was weighted by .06 which was not significantly different from a zero weight. A multiple regression of College Expectation, Mother's Education, and High School Grade Point Average against College Attendance produced the following equation with the indicated weights for the factors, and, assuming that all factors were measured in standard score form:

Attendance Index = 56 College Expectation + 19 Mother's Education + 12 High School Grade Point Average

The first variable, College Expectation, was an item taken from the Personal Data Inventory. The student was asked to state the amount of formal education that he expected to attain. This variable had the highest point biserial correlation, .61, with the criterion. This simply meant that those students who most expected to attend college did attend college. A more common scale, the Brookover Academic Self-Concept scale which was described earlier, also showed a high correlation with the criterion. However, when the effects of College Expectation were removed, the Brookover Academic Self-Concept effects dropped to practically zero. This is to say, the College Expectation score measured similar factors and, at the same time, exhibited a higher correlation with the criterion.

The fact that Mother's Education emerged as an important predictor is not surprising. As noted and discussed earlier, previous research studies have shown Mother's Education to be an important variable in predicting academic success. Other studies have also demonstrated that the best individual predictor of academic success is High School Grade Point Average.

When the effects of the most important variable, College Expectation, were partialled out, the correlation of Mother's Education changed from .30 to .24 and the correlation of High School Grade Point Average was changed from .23 to .15. However, the removal of Mother's Education left the High School Grade Point Average practically unchanged. This would indicate that the latter two variables are independent pieces of information (r=.05), with the variable College Expectation being interdependent upon these two variables. This may well indicate the possibility of an extrinsic variable, not here considered; which is, in fact, the cause of the correlations exhibited. Since there is no way of knowing the nature of this variable, many explanations may be offered.

One explanation may be that this extrinsic variable represents the financial resources available to the family. The family's ability to support a college education for their child may determine to a considerable extent the way he perceives the financial burden of a college education. If the student realizes that his parents cannot afford to send him to college, then his perception of college may include a far greater emphasis upon finance. This would tend to lower his own college expectation which, as we have noted elsewhere, was the most highly weighted variable in the prediction equation for college attendance.

The possibility that the attitude which high school seniors have concerning the expenses involved in obtaining a college education is a significant factor in their decision to attend or not to attend college was investigated. A test for the significance of difference between the means of the college and non-college groups on the College Image-Financial scale resulted in a highly significant "t" ratio of 4.88. This would suggest that the non-college High SCAT group tended to consider college as being more of financial burden than did the college group; and, consequently, attached a greater significance to the monetary aspects of college attendance.

Having identified those variables which best predicted college attendance, the next important matter was to consider those variables which might be altered to increase the likelihood of college attendance.

As Mother's Education is, for all practical purposes, a fixed value, the High School Grade Point Average would appear to be the most promising variable for consideration. However, since the High SCAT students have the ability to achieve a high Grade Point Average, it is the researchers' belief that it should be considered as a function of other variables.

The most important variable which might be altered to increase the likelihood of college attendance is the Brookover Academic Self-Concept. The reader will recall that the Brookover Academic Self-Concept scale measures practically the same thing as the College Expectation variable which was the most highly weighted variable in college attendance prediction. Also the Brookover Academic Self-Concept scale is more extensive and will provide the reader with a better understanding of the variable. The Brookover Academic Self-Concept correlated highly with the criterion (r=.36). It also correlated highly (r=.52) with High School Grade Point Average which was the third most highly weighted variable in predicting college attendance. This would suggest that if a school could improve a student's attitude about his own ability, then it might also significantly improve the chances of that student attending college.

The score on the Brookover Academic Self-Concept was found to be related to the student's image of college as a place to gain independence (r=.13) which, correlated positively (r=.16) with the criterion. Conversely, this would imply that the student's academic self-concept would be improved by providing him with the opportunity for independent study in high school. A highly significant "t" value of 3.74 for the difference between the means of the college and non-college High SCAT groups on the College Image-Independence variable suggested that this might increase the probability of college attendance. (See Table 18)

Scores on the Brookover Academic Self-Concept were also found to be negatively related to the student's image of the financial burden of college (r=.17). This means that an above average academic self-concept is associated with a view of college as being financially more feasible.

Finally, the Brookover Academic Self-Concept correlated positively (the effects were positively correlated even though the number was negative) with all other factors related to college attendance. No significant reverse effects were noted if the Brookover Academic Self-Concept were increased. It may also be noted that the Brookover Academic Self-Concept correlated positively (r=.22) with college persistence.

High SCAT: College Versus College-Persist

The High SCAT was composed of those individuals who can succeed in college. The variables which best predict college entrance for the students in this group have been discussed earlier. Once the student has entered college, interest should focus on those variables which describe those students who persist in college. The students in this study who are said to persist were those who completed the first year of college and began their second year. Of the 360 students who entered college in this group, 265 (73.6 per cent) persisted.

A total of fifteen variables, Mother's Education, College Expectation, SCAT Verbal, SCAT Quantitative, SCAT Total, Brookover Academic Self-Concept, College Image-Social, College-Image, Independence, College Image-Intellectual, College Image-Financial, College Image-Vocational, College Image-Status, College Image-Difficulty, High School Grade Point Average, and McClelland need Achievement, were studied in relation to persistence in college. The intercorrelation matrix is given in Appendix D. The Wherry Doolittle technique was applied to select the variables which were most important in predicting college persistence. The variables selected were High School Grade Point Average, College Expectation, and McClelland need Achievement in that order. A multiple regression of these variables against the dependent variable, College Persistence, gave an R^2 value of .1131. The multiple regression also revealed that the McClelland need Achievement variable did not independently account for a significant portion of the sum of squares.

A second multiple regression with just High School Grade Point Average and College Expectation against College Persistence resulted in R^2 value of .1055 and produced the following equation with the indicated weights assumed in standard score form for all factors:

Persistence Index = 21 College Expectation + 23 High School
Grade Point Average

An interesting aspect of this group is the low correlations of the criterion with the College Image variables. The correlations ranged from .00 to .10. The difference in the means of college and college-persist groups was tested by the "t" test for each of the College Image variables. Table 19 revealed that no "t" ratio was significant. The image of college, as measured here, did not differentiate between those students who persisted in college and those who did not.

A second interesting feature was the low correlation (.10) of Mother's Education to the criterion, College Persistence. It will be recalled that Mother's Education was a heavily weighted variable in predicting college attendance in this high ability group. However, Mother's Education variable did not seem to be a distinguishing characteristic between the college-dropout and college-persist groups. A "t" test for the difference between the means of the two groups on this variable resulted in a "t" ratio of 1.80 which was not significant.

The reader will recall that the Brookover Academic Self-Concept was considered the variable most promising in altering and increasing the likelihood of college entrance. The same variable again appears prominant in relation to college persistence. Above average scores on the Brookover Academic Self-Concept tended to be associated with College Expectation ($r=.33$), and with prior achievement, High School Grade Point Average ($r=.51$) which were the two most important variables in predicting college persistence.

The reader may note the somewhat surprisingly low correlation between McClelland need Achievement and the criterion ($r=.12$). This would suggest that the student's need to achieve does not have any real bearing upon whether or not he stays in college. However, a "t" test of the difference between the means of the two groups resulted in a significant value of 2.20.

Mid SCAT: College versus Non-College

The Mid SCAT group has been defined as those individuals who attained a raw score of greater than 53 and less than 73 on the SCAT. The researchers have classified these individuals as students who, if highly motivated and who, if given proper guidance in selecting a college commensurate with their abilities, could attain a reasonable degree of success in college. It was in this group that 75 per cent (415 out of 558) of the students did not attend college.

The same fifteen variables as in the High SCAT level were studied relative to college attendance in the Mid SCAT group. An intercorrelative matrix for the variables and the criterion, College Attendance, is given in Appendix D. A multiple regression was run with all fifteen variables against the dependent variable, College Attendance. The multiple regression resulted in an R^2 value of .4505 which would indicate that only 45.05 per cent of the variability was accounted for by all of the fifteen variables. Eight variables, Mother's Education, College Expectation, SCAT Verbal, SCAT Quantitative, SCAT Total, College Image-Financial, High School Grade Point Average, and McClelland need Achievement, were found to have regression coefficients significantly different from zero. The small R^2 value (.4505) indicated that not all of the variables were independently adding to the predictive value of the regression.

A multiple regression with the above mentioned eight variables against College Attendance resulted in an R^2 value of .4307. Therefore, less than five per cent of the accountable sum of squares was lost by a reduction of seven variables.

The Wherry Doolittle technique was then applied to select the best combination of variables for predicting college attendance. The five most important variables were found to be "statistically" significant when a multiple regression was run. However, the College Image-Social was found to add only a small amount, that is, the R^2 value increased by less than one per cent (.46 per cent) when the College Image-Social variable was added to the other four. The R^2 value on the multiple regression was .3442 with the deletion of the College Image-Social variable.

It was also noted that the College Image-Independence variable, although statistically significant, actually made little contribution. A multiple regression with just College Expectation, High School Grade Point Average, and Mother's Education against the criterion resulted in the following equation with the indicated weights assumed in a standard score form:

Attendance Index = 12 Mother's Education + 50 College
Expectation + 13 High School Grade
Point Average

The R^2 value for this multiple regression was .3348. It is obvious from this that very little could be gained by considering any of the other variables.

The reader will recall that Brookover Academic Self-Concept scale and College Expectation measure somewhat the same thing (r=.41). When considering the variables which may be altered to increase the likelihood of college attendance, the Brookover Academic Self-Concept also correlated highly (r=.48) with High School Grade Point Average. That is, an improvement in the student's academic self-concept might increase the student's grade point average which, in turn, might increase the probability of his attending college (r=.48). Also, the Brookover Academic Self-Concept correlated -.25 (with positive effect) with the College Image-Financial which, in turn, correlated .12 with the criterion. The only negative effect noted for an increase in the Brookover Academic Self-Concept was with the College Image-Independence variable. However, the correlation between the two was less than .01.

The College Image-Financial variable correlated -.12 with College Attendance and -.22 with College Expectation, the most highly weighted variable in the college attendance prediction equation. When the effects of College Expectation were partialled out in the Wherry Doolittle process, it is the contention of the researchers that the student's financial image of college is involved in the student's college expectation and has a significant bearing upon the probability of his college attendance. It is also contended here that this financial image of college is involved in the student's college expectation and has a significant bearing upon the probability of his college attendance. It is also contended here that this financial image of college is highly relevant to the family's financial capabilities. It is noted that the difference between the means of the college and non-college Mid SCAT groups on the College Image-Financial variable produced a "t" value of 3.02 which was significant at the .01 level. It is also noted that a Chi-Square value of 114.62 (over all groups) on the income personal data item indicated a definite relation between income and college attendance.

Taken together, this would indicate that the financial capacity of the family should be carefully considered by the high school counselor. The student should be made aware of the fact that financial support for college is available. This may improve the accuracy of the student's perception of the financial burden of college education and perhaps increase the probability of his attendance.

It is the researchers' contention that this Mid SCAT group includes many students who, if given proper counseling, are capable of successful college attendance. With such a high percentage of the group, 75 per cent, not attending college, this may well be the group which should be given the most consideration. Though the researchers concede that not all of these students are capable of attaining a degree in a highly specialized field, they are, nonetheless, capable of post high school education and training.

Mid SCAT: College versus College-Persist

The Mid SCAT group has been defined as those students who achieved a raw SCAT score greater than 53 and less than 73. At the same time, we have defined a student as being capable of doing college work if he achieved a raw SCAT score of 60 or above. Therefore, there is included within this group whose who were overachieving as well as those who were truly college material. There were 140 students in this group who entered college and of this number, 84 students (60 per cent) persisted.

Again, the same fifteen variables were studied in relation to persistence in college. The intercorrelation matrix of the variables and the criterion, College Persistence, is given in Appendix D.

The Wher ry Doolittle technique was applied to select the variables which in combination best predict college persistence. The variables selected were High School Grade Point Average, College Expectation, and SCAT Quantitative in that order. A multiple regression with these three variables against the dependent variable, College Persistence, resulted in an R^2 value of .148. When a first regression revealed that SCAT Quantitative was not independently accounting for a significant portion of the sum of squares, a second multiple regression was run with only High School Grade Point Average and College Expectation against the dependent variable. This resulted in an R^2 value of .135 and the following equation with indicated weights assumed in standard score form:

Persistence Index = 24 College Expectation + 26 High School Grade Point Average

A study of the correlation matrix revealed higher correlations within the Mid SCAT group than with the other groups, suggesting a need for studying these students and, perhaps, altering some of their attitudes to increase the probability of their persisting in college.

The highest correlations with the criterion were High School Grade Point Average ($r=.28$), College Expectation ($r=.25$), Brookover Academic Self-Concept ($r=.20$), and Mother's Education ($r=.13$). Since Mother's Education is for all practical purposes a fixed variable, it need not be considered for the purpose of alteration. It was also noted earlier that though College Expectation, High School Grade Point Average, and Brookover Academic Self-Concept were all interrelated, Brookover Academic Self-Concept appeared to be most promisingly related to college attendance and persistence.

It is interesting to note that in this Mid SCAT group the student's image of college, as measured by the College Image scales, exhibited relatively high correlations with Brookover Academic Self-Concept even though the College Image correlations with the criterion were not high. The student with a high score on the Brookover Academic Self-Concept tended to perceive college neither as highly social (r=.21), nor as a place to gain independence (r=.21), nor as having an intellectual atmosphere (r=.17), nor as imposing a financial burden (r=-.23). It is also notable that there was no real pattern to the student's image of college as a place to prepare for a vocation (r=.01), or as a place to improve his status (r=-.08), or as being extremely difficult (r=-.05).

The implication seems to be that the schools should make every effort to increase a Mid SCAT student's academic self-concept in an attempt to increase the probability of his persisting in college.

Low SCAT: College versus Non-College

If talent loss is defined as the failure of capable students to attend college, then the Low SCAT group, consisting of those students who attained a raw SCAT score of 53 or less, is of the least importance. In this group, only 47 students out of 538 (8.75 per cent) entered college.

The same fifteen variables were studied in relation to college attendance. The correlation matrix for these variables and the criterion, College Attendance, is given in Appendix D.

The Wherry Doolittle technique was applied to select those variables which were the most influential in predicting college attendance. The variables selected were Collect Expectation, Mother's Education, High School Grade Point Average, and College Image-Vocational in that order. A multiple-regression with these four variables against the dependent variable, College Attendance, resulted in an R^2 value of .2620. After a first multiple regression revealed that the College Image-Vocational was not independently making a significant contribution, a second multiple regression using College Expectation, Mother's Education, and High School Grade Point Average against the criterion resulted in an R^2 value of .2584, or a loss of only .36 per cent of the accountable sum of squares. The multiple regression produced the following equation with indicated weights assumed to be in standard score form:

Attendance Index = 40 College Expectation + 19 Mother's Education + 16 High School Grade Point Average

This group, in general, was not considered college material; however, one must realize that some of the students have been successful in college. Since the SCAT scores for these students did not indicate high academic potential, we wished rather to consider the other variables which caused college attendance.

Probably the most important variable to consider in this instance would be motivation; yet, we had no direct measure of motivation available. The variable which was considered most likely to be indicative of motivation was the Grade Point Average. It is noted that the college group attained a mean grade point average of 2.16 as against a mean of 1.85 for the non-college group. A "t" test for the difference in the two means gave a value of 3.62 which was significant beyond the .01 level. One source of this motivation may be the mother's education. A "t" test for the difference in the means of the college and non-college groups on this variable, Mother's Education, resulted in a highly significant "t" ratio of 6.69.

A second aspect was the student's "felt need" for achieving. This was measured by the McClelland need Achievement Test. Here we note a mean of 8.26 for the college group and a mean of 7.02 for the non-college group. However, the "t" value for the difference in the means was 1.89 and was not significant.

The possibility that the student's image of college might be a significant factor for this group was explored. A multiple regression was run with the seven College Image variables against the criterion, College Attendance. The result was an R^2 value of only .0391 which suggested that the College Image items accounted for practically none of the variability. The only variable found to be statistically significant was the College Image-Financial. This simply means that those students who perceived college as being very expensive would not be as likely to go to college. The mean value of the college group on the College Image-Financial item was 3.26 as opposed to a mean of 4.44 for the non-college group. The "t" value for the difference in the two means was 4.02 and was highly significant. The College Image-Financial variable also correlated -.17 with the criterion, College Attendance, -.16 with College Expectation, and -.28 with High School Grade Point Average.

One interesting aspect of the Low SCAT group as compared to the High and Mid SCAT groups was the insignificance of the College Image-Independence variable. It will be recalled that both the High and Mid SCAT groups perceived college as a place to gain independence. As a result, it was recommended that the schools provide for independent study. However, this was not the case with the Low SCAT group. The mean for the college group in the College Image-Independence scale was 5.53 and the mean for the non-college group was 5.51, or a difference of .02, suggesting that the lower ability students were not inclined toward independent study.

Low SCAT: College versus College-Persist

It has been noted earlier that the students who scored in the Low SCAT range (less than a raw score of 53) were not generally considered as college material. It was also noted that only 47 out of 538 students (8.75 per cent) entered college; a low, but perhaps startling, percentage.

The same fifteen variables were again studied relative to college persistence. An intercorrelation matrix is given in Appendix D. The Wherry Doolittle technique was applied to select the variables which were most important in predicting college persistence. The variables selected were College Image-Independence, Brookover Academic Self-Concept, and College Image-Social in that order. A multiple regression with these variables against the criterion, College Persistence, resulted in an R^2 value of .28. The multiple regression revealed that College Image-Social did not make a significant contribution to the power of prediction.

A second multiple regression with just Brookover Academic Self-Concept and College Image-Independence gave an R^2 value of .22. This multiple regression also gave the following equation with indicated weights assumed to be in standard score form:

Persistence Index = 35 College Image-Independence + 28 Brookover Academic Self-Concept

It is evident from the fact that only 22.2 per cent of the sum of squares was accounted for by regression that the predictive power could not be very high.

It is interesting to note that "t" tests on the difference between the means of the college-dropout and college-persist groups indicated that they were significantly different on two variables only, College Image-Independence (t=2.72) and College Image-Social (t=5.84). The college-persist group perceived college as providing for much more independent study than did the dropout group.

The second variable, College Image-Social, may be the most important for this group. It must be kept in mind that this group consisted of students of low academic ability who must work hard and must remain highly motivated in order to succeed in college. The "t" test suggested that the dropout group perceived college as having more social activities than the college-persist group. In light of the above, then, the perception of college as a means for social activities was not likely to aid persistence in college for low ability students.

Another interesting aspect of this group was that there was no difference in the means (t=.02) of the two groups on High School Grade Point Average. There was also no difference in the means in ability as measured by the School and College Ability Test, nor was there a difference (t=1.21) between the means on the College Expectation variable which was so important in the High and Mid SCAT groups.

. It has been indicated that this group must be highly motivated to succeed in college. However, there was no difference (t=.66) between the means of the two groups on the McClelland need Achievement Test. This would suggest that the need to achieve as measured by the McClelland n Test scores was not important relative to college persistence.

The logical differentiations that need to be made among the nine groups of individuals are as follows:

1. For each of the three levels of ability we need to determine what factors are significant in the prediction of who will attend and who will not attend college, and

2. For each of the three levels of ability we need to determine what factors are significant in the prediction of which of the individuals who attend college will persist in college.

	NC	CA	CP
High SCAT	1	2	3
Mid SCAT	4	5	6
Low SCAT	7	8	9

The variables and the weights assigned to these variables to predict whether an individual belongs to the college (CA) or non-college (NC) group are listed in Table 23 and a discrimination index is given. For example, to predict that a low ability individual will belong to the college-dropout (CA) group, the sum of two times his College Expectation score, one times his Mother's Education index, and one times his High School Grade Point Average must be greater than 11.46. If a low ability individual were at the mean value of each of the three variables, then the prediction would be that he would belong to the non-college group (a discrimination index of 9.60 which is below 11.46). It is expected that the average individual in this low ability group will belong to the non-college group since only 8.8 per cent of the group entered college.

The appropriate data to answer the question of what deviations from the mean values are necessary to increase the value of the discrimination index above the critical value are listed in columns 9 through 19 of Table 23-A and columns 9 through 16 of Table 23-B.

The value in the brackets is the value which must be attained on that particular variable, with the others held at their means, to predict that an individual will belong to the college group. That is, if all variables except one are held at their means, then the value in brackets is the minimum value which must be attained for that one variable to increase the value of the discrimination index above the critical value. For example, consider an individual in the low ability group; if both his Grade Point Average and his Mother's Education are at the mean (or nearest possible value, in this case 1.88 and 2), then his College Expectation score must be at least 4 (some college) to predict that he will be in the college group.

As a further example from the Table, consider the middle ability group. If a student's scores on Mother's Education, College Expectation, and College Image-Independence are at the mean, then it would be necessary for him to achieve a 9.01 grade point average to increase his discrimination index above the critical value. Obviously, this is impossible.

Similar interpretations can be made from both Tables 23-A and 23-B.

TABLE 23-A. REGRESSION WEIGHTS, MEANS AND DISCRIMINATION INDEX CALCULATED FROM ASSUMED VALUES OF PREDICTOR VARIABLES FOR COLLEGE AND NON-COLLEGE HIGH, MIDDLE AND LOW SCAT GROUPS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Variable		Weight			Means			Assumptions										
	Range	L	M	H	L	M	H	L			M				H			
Mo.Ed.	1–5	1	2	1	2.16	2.39	2.79	2	2	4	2	2	6	2	3	1	3	3
Col. Ex.	1–5	2	8	3	2.78	3.20	4.68	4	3	3	4	3	3	3	4	5	5	4
HS GPA	0–4	1	1	1	1.88	2.40	2.97	1.88	3.46	1.88	2.40	2.40	2.40	9.01	2.97	2.97	0	2.83
CI-Ind	0–12		5			5.97					6	8	6	6				
Disc.Index		11.46	67.01	17.83	9.60	62.63	19.80	11.88	11.46	11.88	68.4	70.4	68.4	67.01	17.97	18.97	18.00	17.83
% Attending					8.8	25.1	63.3											

TABLE 23-B. REGRESSION WEIGHTS, MEANS, AND DISCRIMINATION INDEX CALCULATED FROM ASSUMED VALUES OF PREDICTOR VARIABLES FOR COLLEGE AND COLLEGE-PERSIST HIGH, MID, AND LOW SCAT GROUPS

1 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Variable	Weight			Means			Assumptions							
Range	L	M	H	L	M	H		L			M			H
Col. Exp. 1-5		1	1		4.34	4.80				4	5	5	5	4
HS GPA 0-4		2	1		2.59	3.10				2.70	2.59	2.74	3.10	3.74
Brook. ASC 0-40	1			26.94			27	28	30					
CI-Indep. 0-12	2			5.53			7	6	5					
Discriminating Index	39.15	9.40	7.74	38.00	9.52	7.90	4.10	40.0	40.0	9.4	10.18	7.74	8.10	7.74
Per Cent Persist				29.8	60.0	73.6								

CHAPTER IV

SUMMARY AND CONCLUSIONS

This chapter is divided into four main divisions. Section A will discuss the summary and conclusions as they relate to the nature and extent of the talent loss. Section B will discuss the summary and conclusions as they relate to the ability of the variables to differentiate between college-attenders and non-attenders, and between those students who persisted in college and those who did not. Section C will discuss the summary and conclusions about the interrelationship of the variables as these variables were used to differentiate between (1) high ability students who attended and those who did not attend college, and (2) high ability students who persisted and those who did not persist in college. The middle ability students were categorized into the same categories as had been used with the high ability students and an examination was made of the variables useful to differentiate these middle ability groups. Finally, Section D consists of some recommendations to aid in the reduction of talent loss in West Virginia.

Section A

Talent Loss

In examining the talent loss of those individuals who were above the 50th percentile on national norms, it was found that 48.3 per cent of the male students and 55.2 per cent of the female students in this category did not attend college. The grade point average for those individuals scoring above the 50th percentile was 2.99. These individuals would be considered capable of college work since a 2.50 grade point average is thought to be adequate for academic success in most colleges and universities. However, to go one step further, it was found that 36.6 per cent (male and female) of those individuals above the 75th percentile did not go to college. Moreover, the high school grade point average for the college group was 3.10 and for the non-college group was 2.74. This is to say, a grade point average of 2.74 would be somewhere between a "C" and a "B", actually, closer to a "B". This group of non-attenders certainly should be considered talent loss individuals.

An examination of the SCAT level above which over 50 per cent of a socio-economic group attended college indicates that for students from the managerial and professional categories the SCAT score is in the 70 to 79 raw score range, or at the 75th percentile on the national norms. As for the clerical and sales category of socio-economic status, it was found that students at the 75th percentile on national norms had a 50-50 probability of attending college. The same results were found for those students from the service category. The point on the SCAT that over 50 per cent of the children of the skilled workers attend college is between the scores of 80 to 89, or at about the 85th percentile on national norms. The children from the semi-skilled, unskilled, or retired categories have to be in the 90-99 SCAT interval, which is about the 90th percentile on national norms, to have the prediction of over 50 per cent probability of college attendance. Finally, when the students from the unclassified socio-economic category were examined, they were found to be similar to students from the skilled category. That is, before we have 50 per cent of the students from this unclassified category attending college, they must score at the 80-89 SCAT interval, which is the 85th percentile on national norms. This further demonstrates the fact that talent loss is definitely greater for the lower socio-economic levels.

Section B

Relationship of the Variables to College Attendance

Analyses were made of the responses to the various instruments to determine the ability of each instrument to distinguish between those students who attended college and those who did not attend. The group of students who scored 73 or higher on the SCAT (a percentile equivalent of 70 or higher) was designated as the High SCAT group. For this high ability group, the single item which best distinguished between the college and non-college groups was the College Expectation score. This was an item taken from the Personal Data Inventory. The difference between the mean scores for the two groups was highly significant, and the computed "t" value was 18.28. The following measures are listed in order of importance for differentiating between the groups: High School Grade Point Average, Brookover Academic Self-Concept, Mother's Education, the scores on the Financial and Independence sub-tests of the College Image Index, the McClelland n Achievement, and the score on the Difficulty sub-test of the College Image Index. Each of these variables was shown to differentiate between those students who attended college and those who did not attend from the High SCAT group.

The scores of the students from the middle range of ability were also analyzed in a similar manner. The Mid SCAT group was defined as those students who scored between 52 and 72 points inclusive on the SCAT. These scores correspond to a range of 33rd and 70th percentile on the national norms for SCAT. The variables which were found to differentiate between the college and non-college groups were in order of importance: College Expectation (this was also first for the High SCAT group), Mother's Education, Brookover Academic Self-Concept, High School Grade Point Average, and College Image-Independence and College Image-Financial. These were the only variables which showed significant differences in the mean scores of the two groups when tested by the "t" test for the difference between means.

Further analyses were made between those students who started college but did not continue through the second year and those students who continued at least into the second semester of the sophomore year. These groups were designated College-Attend and College-Persist, respectively. When the factors for the high ability group were analyzed, it was found that the best predictor of whether a student would remain in school after having enrolled was the Brookover

Academic Self-Concept score, with a "t"value of 5.37. The Brookover Academic Self-concept score was also the best predictor of whether students from the Mid SCAT group would remain in school after having enrolled. The "t" value was 5.60.

The differences between the college and non-college students at or above the raw SCAT score of 60 (which is at the 50th percentile on national norms) was investigated. It was found that certain personal data questions may be used to differentiate between those who attend and those who do not attend college. The best question to ask is whether or not the student expects to attend college. The difference in percentage for this study was 62.7 per cent. The second best question to ask is if the student desires to attend college, instead of expects to attend college. The difference between those who attended and those who did not attend was 46.3 per cent. The third best question to ask is, "Does your best friend plan to attend college?" If the answer is "yes", there is then a greater likelihood of that student's attending college. The difference here for this study was 35.5 per cent. The next best question is about Mother's Educational level. If the mother had at least a high school education, then, there is a better chance that her child will attend college. The difference between college-attenders and non-attenders in this study on this variable was 30.9 per cent. Also, if a student has two or fewer siblings, there is a greater likelihood that he will attend college. The difference was 27.0 per cent. If the family subscribes to three or more magazines, then, there is more likelihood that the student will go on to college. The difference between college and non-college was 22.4 per cent. If the father had at least a high school graduation, then, there is a greater likelihood that the child will go on to college. The difference was 21.7 per cent in this case. If the family had an income of more than $5,000 a year, then, there is more likelihood that the individual will attend college. The difference found for this study was 18.8 per cent. Finally, if the mother is employed outside the home, then, there is more likelihood that the child will attend college. The difference between college and non-college in this study was 12.4 per cent.

Section C

Interrelationship of Variables

Since it is logical to determine what variables to select (and how to weight theses) to best differentiate between the two groups a discriminant function analysis was used. (We were convinced that many of the instruments were yielding the same information instead of independent information.) The discriminant function analyses lead us to believe that three instruments were sufficient to differentiate between the High SCAT individuals (above the 70th percentile on national norms) who attended and those who did not attend college. Those variables which can be best used to discriminate between these two groups the High SCAT level are: College expectation score, Mother's Education score, and the individual's High School Grade Point Average. The weights given these variables are as follows: three for College Expectation, and one each for Mother's Education and High School Grade Point Average. The College Expectation score can have any value from one through five; the Mother's Education, from one through five; and the High School Grade Point Average, of course, can have values from zero through four. Each of these scores are, therefore, roughly of the same general magnitude and the weights would indicate something about the importance given the variable as well as the score.

To differentiate between the Mid SCAT college-attenders and non-attenders, four variables were found to be relevant. They are: College Expectation score, Independence sub-score of the College Image Index, Mother's Education score, and High School Grade Point Average. The weights assigned to these variables are: eight for College Expectation, five for College Image-Independence score, two for Mother's Education, and one for High School Grade Point Average. The range of values that College Expectation can take is again one through five. The College Image-Independence score can have values from zero through twelve. The Mother's Education score has values of one through five, and High School Grade Point Average ranges from zero through four. These values should help in the interpretation of the weight that are assigned to different values of the variable.

It only takes two variables to differentiate between the high ability individuals who attended college but left and the high ability individuals who attended and persisted in college. (The high ability group is composed of those individuals at or above the 70th percentile on the national norms.) These two variables are College Expectation and High School Grade Point Average. Each of these are weighted equally and both have about the same range, with College Expectation having a range of values of one through five and High School Grade Point Average having a range of values of zero through four. It was found that for the middle ability group, College Expectation and Grade Point Average are the two relevant variables; however, in this group, the High School Grade Point Average should be weighted twice as much as College Expectation.

Section D

Summary and Conclusions

One conclusion which can be reached from this study seems to be that if one wishes to change a variable which is related to whether or not the individual will attend college, the most likely variable to be changed is College Expectation. If the student's college expectation is that he will graduate from high school, and his mother's education is average for his group, which is high school graduation, and if his grade point average is 4.0, we would still predict that he would NOT attend college. To check this one may turn to Table 23-A and add up the values times their weights to determine if this value is greater than 19.80 which is the discrimination index for High SCAT individuals above which we would predict college attendance. One may create any other set of values desired. The Mid SCAT individual, those scoring above the 33rd percentile but below the 70th percentile on national norms on SCAT, again present the same picture. If the individual has only an expectation that he will finish high school, and his mother's education is some high school, which is average for his group, and his College Image-Independence score is six, which is also average for his group, he would then have to have a grade point average of 9.01 out of a four (which is obviously impossible), in order for one to predict that he would attend college. Thus, it seems evident that College Expectation is the only major variable that we can alter, which will make a difference in terms of our predicting whether or not one will be in the group of those who attend college.

If instead of asking the question of whether or not an individual would attend college, we ask the question whether or not he would persist in college, the variables which are found important here for both the middle and high ability groups are again College Expectation and High School Grade Point Average. If the high ability student were to assume that he would attend college but not graduate from college, then his grade point average would have to almost be a four point (3.74) before we could predict that he would be in the college-persist. However, if the individual had only an average grade point average for his ability level (3.10) and we wish to predict that he would remain in college, then his college expectation would have to have been that he would graduate from college instead of just attend college. Again, the importance of College Expectation as a variable for college persistence is demonstrated.

When one considers the Mid SCAT group, one finds the same situation. The individual who says that he would like to attend college but does not plan to graduate would have to have above average grade point average for his ability level (2.59) for one to predict that he would belong in the college-persist group. However, if an individual says that he expects to graduate from college, then, notwithstanding his 2.59 grade point average, it could be predicted that he would persist in college. Again, College Expectation seems to be the major variable in that it is able to operate in keeping the individual in college. Since College Expectation seems to be a variable that we are able to change or do something about, it seems that this is a likely place to begin work. In fact, looking back at what variables differentiate between the students who attend college and those that do not attend, we find that the College Expectation variable ranked first among the High SCAT as well as the Mid SCAT groups. On the other hand, the most important variable that differentiates between those students who persist in college and those who do not is Academic Self-Concept. Nevertheless, Academic Self-Concept is highly related to College Expectation. In fact, the literature on changing Academic Self-Concept should be relevant to changing college expectation. Again, if one looks at the college-attend versus college-persist for the Mid SCAT level, one finds that College Expectation is the third ranking variable instead of the first, but the first ranking variable is again Academic Self-Concept. Because of the relationship between Academic Self-Concept and College Expectation, these variables are not chosen in a one, two order by a multiple prediction scheme. The Academic Self-Concept, as has probably been noticed, was not chosen by any of the prediction schemes when data were combined to best predict which of the groups an individual would belong. This is an indication of the relationship between Academic-Self-Concept and College Expectation.

It would appear that an experimental study which could manipulate the variable of Academic Self-Concept or College Expectation is warranted.

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APPENDIX A

FIRST FOLLOW-UP TO OBTAIN ADDRESSES OF GRADUATED SENIORS

Dear Friend:

First allow me to introduce myself: I am Benjamin H. Bailey, Associate Professor of Education at West Virginia University. I am conducting a study of certain high school graduates for the United States Office of Education. We are attempting to locate these students to see where they are and what they are doing. One of these students has given us your name as someone who will always know his/her mailing address. This person's name is on the attached post card. Would you please add the address to the name, remove the card from this one, and mail it to us. The card is self-addressed and stamped for your convenience.

Thank you very much for your time and cooperation.

Sincerely yours,

09166 Fisher, James Addison

SECOND FOLLOW-UP TO OBTAIN ADDRESSES OF GRADUATED SENIORS

Dear Friend:

A few weeks ago, a card was sent to you asking for the address of one of last year's high school seniors. This person gave your name as someone who would always know his/her mailing address. We have not received a reply from you at this time.

The study I am conducting for the United States Office of Education necessitates our having this address so we can write to this person for information needed in the study. This person's name is on the attached post card. Would you please add the current mailing address to the name, remove the card from this one, and mail it to us. The card is self-addressed and stamped for your convenience.

Thank you very much for your time and cooperation.

Sincerely yours,

09191 Gore, Donna Jean

FIRST FOLLOW-UP TO OBTAIN INFORMATION ON GRADUATED SENIORS

Dear Graduate of 1964:

You probably remember that last spring some people from West Virginia University were around your high school giving tests to the seniors. We are now in the process of doing a "follow up" study of all the seniors who took the tests.

We would greatly appreciate it if you would complete the attached questionnaire and return it to us. The card is self-addressed and stamped for your convenience.

Sincerely yours,

Benjamin H. Bailey
Project Director

PLEASE CHECK THE APPROPRIATE BLANKS AND COMPLETE THE FOLLOWING INFORMATION

1. Are you attending school at the present time? Yes No

2. If you are attending school at the present time, complete the following:
   Name of school
   Location of school
   What are you studying?

3. If you are not attending school at the present time, complete the following:
   Are you employed?
   If so, where?
   What type of job?

4. If you are not attending school at the present time, do you plan to attend school in the future? Yes No

   If you do plan to attend later:
   When?
   Where?

5. What is your present mailing address?

   Name
   Street
   City and State Zip Code

SECOND FOLLOW-UP TO OBTAIN INFORMATION ON GRADUATED SENIORS

Dear Graduate of 1964:

A few weeks ago we mailed you a questionnaire asking you to complete it and return it to us. Since that time, we have not heard from you. You probably remember that last spring some people from West Virginia University were around your high school giving tests to seniors. This questionnaire is part of a follow-up study of all the seniors who took the tests. It is very important to us that we receive this completed questionnaire from you.

We would greatly appreciate it if you would complete the attached questionnaire and return it to us. The card is stampled and self-addressed for your convenience.

Sincerely yours,

Benjamin H. Bailey
Project Director

PLEASE CHECK THE APPROPRIATE BLANKS AND COMPLETE THE FOLLOWING INFORMATION

1. Are you attending school at the present time? Yes No

2. If you are attending school at the present time, complete the following:
   Name of school
   Location of school
   What are you studying?

3. If you are not attending school at the present time,complete the following:
   Are you employed?
   If so, where?
   What type of job?

4. If you are not attending school at the present time, do you plan to attend school in the future? Yes No

   If you plan to attend later:
   When?
   Where?

5. What is your present mailing address?

   Name
   Street
   City and State Zip Code

APPENDIX B

ACADEMIC SELF-CONCEPT

These statements are to help you describe yourself as you see yourself. Please respond to them as honestly as you can, as if you were describing yourself to yourself. Do not omit any item! Read each statement carefully, select the best answer, and blacken the corresponding space on the answer card.

BE SURE TO USE THE WHITE ANSWER CARD MARKED ASC.

1. Where do you think you would rank in your class in high school?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

2. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?

   a. very likely
   b. somewhat likely
   c. not sure either way
   d. unlikely
   e. most unlikely

3. Do you think you have the ability to complete college?

   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probably not
   e. no

4. How do you rate yourself in school ability compared with those in your class at school?

   a. I am among the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am among the poorest

GO ON TO NEXT PAGE

5. Forget for a moment how others grade your work. In your own opinion how good do you think your work is in high school?

   a. my work is excellent
   b. my work is good
   c. my work is average
   d. my work is below average
   e. my work is much below average

6. What kind of grades do you think you are capable of getting in high school?

   a. mostly A's
   b. mostly B's
   c. mostly C's
   d. mostly D's
   e. mostly E's

7. Where do you think you would rank in your class in college?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

8. How do you rate yourself in school ability compared with your close friends?

   a. I am the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am the poorest

COLLEGE

SCAT 100-109

Academic Self Concept	McClelland need Achievement
N=26	N=26
M=34.8	M=9.8
SD=7.0	SD=3.6

Occupations:

13 Managerial and Professional
3 Clerical and Sales
2 Service
5 Skilled
1 Semi-skilled
2 Unskilled

Colleges:

1 Junior College
1 Liberal Arts
5 Liberal Arts and Teacher Preparatory
1 Liberal Arts and Others
1 Teachers College and Professional
1 University giving MA only
11 University offering Ph.D.

COLLEGE

SCAT 90 - 99

Academic Self Concept	McClelland need Achievement
N=107	N=112
M=33.8	M=9.5
SD=2.8	SD=4.8

Occupations:

33 Managerial and Professional
11 Clerical and Sales
8 Service
3 Retired
31 Skilled
8 Semi-skilled
10 Unskilled
1 Unemployed
7 Not Classified

Colleges:

11 Junior College
2 Professional and Terminal-occupation (less than four years)
1 Liberal Arts
24 Liberal Arts and Teachers College
10 Liberal Arts and Others
7 Professional and Teacher Preparatory
14 University giving MA only
44 University giving Ph.D.

COLLEGE

SCAT 80-89

Academic Self Concept	McClelland need Achievement
N-122	N=122
M=32.0	M=9.8
SD=8.9	SD=4.3

Occupations:

44 Managerial and Professional
11 Clerical and Sales
4 Service
5 Agricultural, Fishery, Forestry, and Kindred
38 Skilled
6 Semi-skilled
9 Unskilled
2 Retired
3 Not classified

Colleges:

2 Terminal-occupational (below Bachelor's degree)
6 Junior College
38 Liberal Arts and Teachers College
16 Liberal Arts and Others
5 Professional and Terminal-occupational
18 University giving MA only
37 University giving Ph.D.

COLLEGE

SCAT 70-79

Academic Self Concept	McClelland need Achievement
N=116	N=116
M=8.47	M=29.88

Occupations:

34 Professional and Managerial
13 Clerical and Sales
10 Service
4 Agricultural, Fishery, Forestry, and Kindred
27 Skilled
2 Semi-skilled
10 Unskilled
4 Retired
4 Unemployed
8 Not Classified

Colleges:

19 Junior College
34 Liberal Arts and Teacher Preparatory
24 Liberal Arts and General
5 Professional and Teacher Preparatory
25 University offering MA
14 University offering Ph.D.

COLLEGE

SCAT 60-69

Academic Self Concept	McClelland need Achievement
N=81	N=81
M=8.02	M=28.76

Occupations:

19 Managerial and Professional
5 Clerical and Sales
4 Service
3 Agricultural, Fishery, Forestry, and Kindred
28 Skilled
8 Semi-skilled
7 Unskilled
3 Retired
3 Unemployed
1 Not Classified

Colleges:

16 Junior College
25 Liberal Arts and Teachers College
27 Liberal Arts and General
2 Professional and Teacher Preparatory
10 University offering MA
7 University offering Ph.D.

NON-COLLEGE

SCAT 60-69

Academic Self Concept	McClelland need Achievement
N=226	N=226
M=26.64	M=8.19

Occupations:

27 Professional and Managerial
13 Clerical and Sales
13 Service
1 Agricultural, Fishery, Forestry, and Kindred
54 Skilled
22 Semi-skilled
45 Unskilled
14 Retired
12 Unemployed
25 Not Classified

23 Terminal Occupation (Trade School)

NON-COLLEGE

SCAT 70-79

Academic Self-Concept	McClelland need Achievement
N=142	N=142
M=28.79	M=8.73

Occupations:

25 Professional and Managerial
11 Clerical and Sales
10 Service
30 Skilled
7 Semi-skilled
20 Unskilled
12 Retired
12 Unemployed
15 Not Classified

14 Terminal Occupation (Trade School)

NON-COLLEGE

SCAT 80-89

Academic Self Concept	McClelland need Achievement
N=76	N=76
M=29.33	M=8.61

Occupations:

18 Professional and Managerial
6 Clerical and Sales
2 Service
12 Skilled
11 Semi-skilled
16 Unskilled
3 Retired
5 Unemployed
3 Not Classified

10 Terminal Occupation (Trade School)

NON-COLLEGE

SCAT 90-99

Academic Self Concept	McClelland need Achievement
N=34	N=34
M=31.56	M=7.62

Occupations:

7 Professional and Managerial
3 Clerical and Sales
2 Service
8 Skilled
3 Semi-skilled
3 Unskilled
1 Retired
3 Unemployed
4 Not Classified

7 Terminal Occupation (Trade School)

NON-COLLEGE

SCAT 100-109

Academic Self Concept	McClelland need Achievement
N=3	N=3
M=33.3	M=8.33

Occupations:

1 Professional and Managerial
1 Unskilled
1 Unemployed

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happend in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

COLLEGE IMAGE

We are interested in learning what high school students think about college. We are aware that you may be unsure about what college is like. However, we are interested in your opinions and beliefs; therefore, you need not be concerned about getting a "high" or "low" score. Just answer the questions as carefully and honestly as you can. Please answer all the items regardless of your plans after high school.

Read the sample pair of statements below:

S. A. Colleges are almost always quiet, peaceful places.
B. Things often get pretty loud and noisy at college.

Decide which of the two, in your opinion, better describes college, and blacken the corresponding space in the sample answer space below. If you think neither statement accurately describes college, choose the one that most nearly describes college. If you think both statements accurately describe college, choose the one that better describes college.

S. (A) (B) (C) (D) (E)

There are 84 pairs of statements on the following pages. Take your time and read each statement carefully. You will have as much time as you need to finish all the items.

BE SURE TO BEGIN WITH THE WHITE ANSWER CARD MARKED CI.

College Image Scales

F		1.	A. You don't have to have a lot of money to go to college.
	*		B. There's no use even considering college unless you have a lot of money.
F		2.	A. Most students don't hold part-time jobs while going to college.
	*		B. Most students do hold part-time jobs while going to college.
F	*	3.	A. The chief reason students drop out of college is financial.
			B. The chief reason students drop out of college is poor grades.
ST		4.	A. It doesn't matter much what group or club you belong to in college.
	*		B. It's important to be in the right club or group in college.
D	*	5.	A. Most students get extremely tense during exam periods.
			B. Most students do not become too tense during exam periods.
D	*	6.	A. All of the courses in college are pretty hard.
			B. Some of the courses in college are really pretty easy.
IND	*	7.	A. Students are expected to be able to take care of themselves.
			B. Students are constantly being reminded about what they should do.
V	*	8.	A. The most useful part of college is the part that helps you to earn a living.
			B. The part of college that doesn't help you earn a living is just as useful.
V		9.	A. In college, students spend comparatively little time planning their careers.
	*		B. College students spend most of their time planning their careers.
D		10.	A. There is time for other worth-while things as well as for classes and studying.
	*		B. Students miss out on a lot that is valuable at college because they have to study so hard.
F		11.	A. It costs more, but not too much more, to go to college than to go to high school.
	*		B. It costs a lot more to go to college than to go to high school.

Go on to next page

INT	12.	A. Very few college students would attend a lecture by an outstanding philosopher.
*		B. Many college students would attend a lecture by an outstanding philosopher.
INT*	13.	A. College students often talk about their studies in their free time.
		B. When students get together, they seldom talk about their studies.
ST *	14.	A. You have a better chance of being somebody if you go through college.
		B. A person who doesn't go to college has as much chance to be somebody as a college graduate does.
S *	15.	A. Most boys and girls in college go steady.
		B. Only a few boys and girls in college go steady.
IND	16.	A. Even if they had the money, most students would really prefer to go to college near their home.
*		B. One of the things students like best about college is that they can live away from home.
F	17.	A. The main thing that determines whether one will go to college is how smart he is.
*		B. The main thing that determines whether one will go to college is how much money he has.
INT*	18.	A. It is really something to belong to campus honor societies.
		B. Very few students care about scholastic honor groups.
IND*	19.	A. Students need not behave as other students do.
		B. Pressure is put on students to live up to expected codes of conduct.
INT	20.	A. Most courses tend to be pretty dull.
*		B. Most courses are exciting intellectually.
IND	21.	A. Students seldom argue with the professors.
*		B. Students frequently argue with the professors.
S *	22.	A. There are many pep rallies, parades, dances, carnivals, and demonstrations on the campus.
		B. There is not much to do except go to classes and study.

Go on to next page.

INT 23. A. Student rooms are most likely to be decorated with pennants and pin-ups.
* B. Student rooms are most likely to be decorated with pictures.

S * 24. A. Nearly all students want to join a fraternity or sorority in college.
B. Most students don't care about joining sororities or fraternities.

V * 25. A. Most of the courses students take are intended to help them prepare for their careers.
B. Students take a lot of courses that they know won't help them in their careers.

IND* 26. A. Students are encouraged to be independent.
B. There are so many rules and regulations that students have little opportunity to be independent.

D * 27. A. No matter how hard they try to keep up, most students get behind in their assignments.
B. So long as they try, most students manage to keep up with their assignments.

S * 28. A. There are many opportunities for students to get together in extra-curricular activities.
B. Extra-curricular activities are not emphasized at college.

S * 29. A. It's easy to get a group together for card games, singing, going to movies, etc.
B. Most students aren't too interested in doing things or going places with others.

S * 30. A. It's easy to find a group of students to pal around with in your free time.
B. It's pretty hard to get acquainted with other students in college.

IND 31. A. The professors regularly check up on the students to make sure that assignments are getting carried out properly and on time.
* B. The professors don't check on whether the students are doing the assignments.

V * 32. A. It is probably more important for boys to go to college because boys will have to work throughout their adult lives.
B. College is just as important for girls even though they may not have to work afterwards.

Go on to next page.

D * 33. A. Most of one's time at college is spent in studying.
B. Homework seldom takes more than an hour or two a day.

INT 34. A. Famous people are seldom brought to the campus for student discussions, lectures, and concerts.
* B. Many famous people are often brought to the campus for student discussions, lectures, and concerts.

S * 35. A. Most students spend a lot of time in dairy bars, taverns, and other such gathering places.
B. Very few students go to such places as dairy bars, taverns, etc.

IND* 36. A. Students are usually allowed to run their own organizations.
B. Student organizations are closely supervised by sponsors to guard against mistakes.

IND* 37. A. College students can do pretty much as they please and don't have to get permission from others.
B. College students have to ask for permission for many of the things they do.

IND* 38. A. Students are free to live wherever they please while they are at college.
B. All college students must live in housing approved by the school.

INT 39. A. College theatrical groups don't arouse much student interest.
* B. College students are very much interested in their theatrical groups.

ST * 40. A. A student who goes to college is respected and admired by people in his home town.
B. Most home town people don't pay much attention to who goes to college.

V * 41. A. The main reason students go to college is to prepare for a job.
B. The main reason students go to college is to get a good general education.

INT* 42. A. Most students would rather succeed in making the Dean's list (honor roll) than anything else in college.
B. Most students would rather win a letter in sports or be a cheerleader than make the Dean's list.

Go on to next page.

ST 43. A. Most clubs will allow anyone who is interested to join.
* B. You can't get into most clubs at college unless you know the right people.

D 44. A. Standards set by professors are not too difficult for most students.
* B. Standards set by professors are usually too hard for the average student.

V * 45. A. The average college graduate earns a lot more money than someone who doesn't go to college.
B. You earn a little more by going to college, but not a lot more.

INT* 46. A. Most students develop a strong feeling of concern about politics and social problems.
B. Most students are not interested in such things as politics and social problems.

ST * 47. A. College graduates are usually community leaders.
B. College graduates are not looked to for community leadership any more than those who did not go to college.

IND* 48. A. If you want to sleep late on Sunday morning, nothing will be said about it.
B. Students are expected to attend church.

ST * 49. A. The important people at college receive proper respect from others.
B. Everyone at college is treated alike, no matter how important he is.

F 50. A. It doesn't cost very much to go to college.
* B. Going to college is very expensive.

(BEGIN USING GREEN CARD MARKED CI.)

ST * 51. A. What one's family does for a living carries a lot of weight in college.
B. What one's family does for a living doesn't make any difference in college.

S 52. A. Most social events occur at special times only -- Homecoming, Christmas, Easter, etc.
* B. You could go to a dance or party almost every night at college if you wanted to.

F 53. A. You don't need much spending money to be popular in college.
* B. You need a good bit of spending money to be popular in college.

Go on to next page.

INT 54. A. Students who work for high grades are likely to be regarded as odd.
* B. Nearly all college students work for high grades.

IND 55. A. Students are careful not to do anything that would be unacceptable to others.
* B. Most students will do something even when they know they will be criticized for it.

D * 56. A. All students, even the brightest students, have to work hard to do passing work in college.
B. The bright student can do passing work without too much effort, while the average student has to work very hard to pass.

V * 57 A. It is almost impossible to get a decent job if you don't go to college.
B. You can get a job whether or not you go to college.

ST * 58. A. People at most colleges are from the upper class.
B. More college students are from the middle and lower classes than from the upper class.

ST 59. A. There's nothing special about being able to go to college.
* B. Those who go to college are looked up to by their friends.

D 60. A. The average high school student can be successful in college.
* B. Unless you're very bright, there's not much use in your going to college.

F 61. A. Most college students come from families with average incomes.
* B. Most college students come from wealthy families.

ST * 62. A. People may not talk about how much money your family has, but everyone knows who's who.
B. In college, it doesn't matter how much money your family has.

D * 63. A. Nearly all your time in college is taken up with studying and preparing assignments.
B. Homework doesn't take up much of your time.

INT 64. A. A student who shows a great interest in classical music or art is likely to be regarded as a little strange.
* B. Many students are interested in classical music and art.

Go on to next page.

D * 65. A. If a student lets his work pile up until just before exams, he's sunk.
B. Most students can let work pile up and still come out all right.

D * 66. A. The amount of work in college is much greater than it is in high school.
B. There's not much more work in college than there is in high school.

S 67. A. Social activities are limited to the weekends.
* B. At college there are social activities going on most of the time.

V. 68. A. Most high school students go to college even when they don't know what they want to do for their life's work.
* B. Most high school students who haven't chosen their life's work feel that they should postpone going to college.

V * 69. A. The principal emphasis in college is on preparation for a career.
B. The principal emphasis in college is on a well-rounded education.

D 70. A. Students are aided in preparing for examinations because professors usually let them know what to study and how to prepare for the exams.
* B. Students are handicapped in preparing for examinations by not knowing what will be expected of them.

S * 71. A. Most students relax and have fun for a while in the afternoon.
B. Most students don't take time for relaxation and fun.

ST 72. A. There is no recognized group of student leaders in college.
* B. Everyone on campus knows who the student leaders are.

F 73. A. If a student runs out of money in college, he can usually borrow from a college loan fund.
* B. Colleges seldom lend money to students, no matter how badly they need it.

S * 74. A. So much is going on in the afternoons and evenings that it is easy to be distracted from one's study.
B. Except on weekends, there isn't much to do but study.

V * 75. A. There's no advantage in going to college unless you plan to have a career.
B. Preparing for a career is not the most important part of college.

Go on to next page.

F * 76. A. You're expected to wear expensive clothes in college.
B. Ordinary clothes are all right in college.

IND 77. A. Students must have a written excuse for an absence from class.
* B. Students may miss class if they want.

ST * 78. A. Student leaders get lots of special privileges.
B. No special privileges are granted to student leaders.

F 79. A. A person can usually get a scholarship or loan if he needs it.
* B. Scholarships and loans are difficult to get, regardless of need.

S * 80. A. There is lots of informal dating during the week -- at the library, snack bars, movies, etc.
B. What dating there is usually occurs on weekends.

INT 81. A. Most students are satisfied as long as they get by in their class work.
* B. Students set high standards of achievement for themselves.

V 82. A. Teachers in college aren't interested in the future plans of students.
* B. In college the teachers help students to plan and prepare for the jobs they will have after graduation.

V * 83. A. In college they teach you things that will be useful in your future work.
B. Most courses in college don't have much to do with getting and keeping a job.

F * 84. A. Lack of money keeps most students from going to college.
B. Lack of money doesn't keep as many students from going to college as most people think.

APPENDIX C

Michigan State General Self-Concept of Ability Scales

1. Where do you think you would rank in your class in high school?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

2. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?

   a. very likely
   b. somewhat likely
   c. not sure either way
   d. unlikely
   e. most unlikely

3. Do you think you have the ability to complete college?

   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probably not
   e. no

4. How do you rate yourself in school ability compared with those in your class at school?

   a. I am among the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am among the poorest

5. Forget for a moment how others grade your work. In your own opinion how good do you think your work is in high school?

   a. my work is excellent
   b. my work is good
   c. my work is average
   d. my work is below average
   e. my work is much below average

Go on to next page.

6. What kind of grades do you think you are capable of getting in high school?

   a. mostly A's
   b. mostly B's
   c. mostly C's
   d. mostly D's
   e. mostly E's

7. Where do you think you would rank in your class in college?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

8. How do you rate yourself in school ability compared with your close friends?

   a. I am the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am the poorest

Personal Data Information

The following questions pertain to basic information about you. Please answer all questions as carefully and accurately as you can. If you are unsure of an answer, guess at what you think the best answer would be. You have all the time you need. Do not write on the test itself, except for the questions on the last page. Answer those in the space provided.

PUT ALL OTHER ANSWERS ON THE ANSWER CARD MARKED P D.

1. What is your sex?
   - a. Male
   - b. Female

2. How old are you?
   - a. 16 or under
   - b. 17
   - c. 18
   - d. 19
   - e. 20 or over

3. What is your class standing?
   - a. Freshman
   - b. Sophomore
   - c. Junior
   - d. Senior

4. How many years have you spent in college, including the current one? (Do not count kindergarten.)
   - a. 10
   - b. 11
   - c. 12
   - d. 13
   - e. 14 or more

5. What is your race?
   - a. White
   - b. Negro
   - c. Oriental

6. What is your marital status?
   - a. Single
   - b. Married
   - c. Engaged

7. In which course of study are you enrolled?
   - a. College Preparatory
   - b. Commercial
   - c. Vocational
   - d. General
   - e. Other

8. How many brothers and sisters do you have?
   - a. None
   - b. One
   - c. Two
   - d. Three
   - e. Four or more

GO ON TO NEXT PAGE.

9. In relation to your brothers and sisters, where do you stand?
    a. Don't have brothers or sisters
    b. Oldest
    c. Youngest
    d. Somewhere in between oldest and youngest

10. What is the religious preference of your family?
    a. Protestant (Methodist, Baptist, Presbyterian, Lutheran, etc.)
    b. Catholic
    c. Jewish
    d. None

11. Have your parents been divorced or separated?
    a. Yes
    b. No

12. Are both your parents living?
    a. Yes
    b. No

13. With whom do you make your home?
    a. Parents
    b. Foster parents
    c. Brother or sister
    d. Grandparents
    e. Other relative

14. How many years of formal schooling did your mother complete?
    a. Elementary school
    b. Some high school
    c. Graduated from high school
    d. Some college
    e. Graduated from college

15. How many years of formal schooling did your father complete?
    a. Elementary school
    b. Some high school
    c. Graduated from high school
    d. Some college
    e. Graduated from college

16. Have any of your brothers or sisters attended college?
    a. I have no brothers or sisters.
    b. Yes
    c. No

17. Is your mother employed outside the home? (If your mother is deceased or if you do not make your home with her, mark answer d.)
    a. Yes, full time
    b. Yes, part time
    c. No
    d. None of the above

18. What is the approximate total income of your family per year?
    a. 0 - $2,500
    b. $2,501 - $5,000
    c. $5,001 - $7,500
    d. $7,501 - $10,000
    e. $10,001 or more

GO ON TO NEXT PAGE.

19. Do your parents own or rent your present home?

    a. Own b. Rent

20. Does your family own one or more cars?

    a. Yes b. No

21. Do you own your own car?

    a. Yes b. No

22. Do you have unlimited use of the family car?

    a. Family doesn't have a car
    b. Yes
    c. No

23. To how many magazines does your family regularly subscribe?

    a. 0
    b. 1
    c. 2
    d. 3
    e. 4 or more

24. Does your family subscribe to a daily newspaper?

    a. Yes b. No

25. Does your family belong to a book-of-the-month club or to a phonograph record club?

    a. Yes b. No

26. Approximately how many books have you read during the past two years, other than those assigned?

    a. 0
    b. 1 - 5
    c. 6 - 10
    d. 11 - 15
    e. 16 or more

27. Approximately how many states (not including West Virginia) have you visited during the past five years?

    a. 0
    b. 1-2
    c. 3-4
    d. 5-6
    e. 7 or more

28. If you were free to go as far as you wanted to in school, how far would you like to go?

    a. I'd like to quit right now.
    b. I'd like to graduate from high school.
    c. I'd like to go to business school, technical school, or nurses' training.
    d. I'd like to go to college for a while.
    e. I'd like to graduate from college.

GO ON TO THE NEXT PAGE.

29. Sometimes what we would like to do isn't the same as what we expect to do. How far do you expect you really will go?
    - a. I think I really will quit school as soon as I can.
    - b. I think I really will graduate from high school.
    - c. I think I really will go to business school, technical school, or to nurses' training.
    - d. I think I really will go to college for a while.
    - e. I think I really will graduate from college.

30. Does your best friend plan to attend college?
    - a. Yes
    - b. No

31. What has been the attitude of your parents toward your going to college?
    - a. They have discouraged me.
    - b. The possibility of my going to college has seldom, if ever, been mentioned.
    - c. They have mildly encouraged me.
    - d. They have strongly encouraged me.

32. How much do you think the total cost would be per year to attend college? (Includes fees, tuition, transportation, books, room, board, incidentals, etc.)
    - a. $500 or less
    - b. $501 - 900
    - c. $901 - 1,300
    - d. $1,301 - 1,700
    - e. $1,701 or more

PERSONAL DATA ITEMS RANKED

Rank	Index	Chi-Square	Item #	Subject
1	767.91	767.91	29	Educational Expectations
2	470.68	470.68	28	Educational Aspirations
3	439.47	439.47	7	Course of Study
4	294.14	261.60	30	Best Friend's Plans
5	243.37	243.37	14	Mother's Education
6	232.69	232.69	15	Father's Education
7	166.56	166.56	8	Number of Siblings
8	145.70	145.70	23	Number of Family Magazine Subscriptions
9	114.62	114.62	18	Family Income
10	108.07	108.08	27	Number of States Visited
11	61.64	58.92	6	Marital Status
12	60.83	58.15	16	Siblings in College
13	56.11	55.19	9	Sibling Position
14	48.09	45.97	22	Unlimited Use of Car
15	46.24	46.24	2	Age
16	31.53	28.04	24	Newspaper Subscriptions
17	28.56	25.40	20	Automobile Ownership
18	24.29	21.60	1	Sex
19	16.88	16.88	13	Student Makes Home with
20	16.46	14.64	19	Home Ownership
21	16.37	15.65	10	Religious Preference
22	15.56	15.56	32	Cost of College
23	15.15	14.90	17	Mother Employed
24	13.54	12.04	25	Family Book Club Membership
25	8.95	7.96	11	Parents Divorced
26	7.95	7.82	31	Attitudes of Parents Toward College
27	7.75	6.89	12	Parents Living or Dead
28	7.56	6.72	5	Race
29	5.82	5.18	21	Personal Car
30	4.52	4.02	10	Catholicism versus Protestantism
31	2.26	2.26	26	Number of Books Read

PERSONAL DATA RESULTS

College and Non-College

Question		College Number	College Per Cent	Non-College Number	Non-College Per Cent
1.	a	313	57.0	533	46.6
	b	236	43.0	610	53.4
2.	a	8	1.5	6	.5
	b	401	73.0	686	60.2
	c	129	23.5	347	30.4
	d	10	1.8	83	7.3
	e	1	.2	18	1.6
3.	a	0	0.0	0	0.0
	b	1	.2	0	0.0
	c	1	.2	7	.6
	d	546	99.6	1,127	99.2
	e	0	0.0	2	.2
4.	a	1	.2	2	.2
	b	8	1.5	16	1.4
	c	515	93.9	957	83.7
	d	24	4.4	149	13.0
	e	0	0.0	19	1.7
5.	a	531	96.7	1,071	93.7
	b	15	2.7	68	5.9
	c	3	.5	3	.3
	d	0	0.0	1	.1
6.	a	540	98.4	994	87.0
	b	2	.4	41	3.6
	c	6	1.1	108	9.4
	d	1	.2	0	0.0
7.	a	349	63.6	174	15.2
	b	20	3.6	204	17.9
	c	6	1.1	127	11.1
	d	91	16.6	431	37.8
	e	83	15.1	205	18.0

		College		Non-College	
Question		Number	Per Cent	Number	Per Cent
8.	a	70	12.8	79	6.9
	b	180	32.8	189	16.5
	c	153	27.9	214	18.7
	d	78	14.2	206	18.0
	e	68	12.4	454	39.8
9.	a	67	12.2	80	7.0
	b	198	36.1	300	26.3
	c	149	27.1	280	24.5
	d	134	24.4	476	41.7
	e	1	.2	6	.5
10.	a	506	92.3	1,044	91.3
	b	34	6.2	44	3.8
	c	3	.5	1	.1
	d	5	.9	52	4.5
	e	0	0.0	2	.2
11.	a	56	10.2	173	15.1
	b	493	89.8	963	84.3
	c	0	0.0	0	0.0
	d	0	0.0	6	.5
	e	0	0.0	1	.1
12.	a	505	92.0	1,002	87.7
	b	44	8.0	140	12.2
	c	0	0.0	0	0.0
	d	0	0.0	1	.1
	e	0	0.0	0	0.0
13.	a	530	96.5	1,038	91.1
	b	2	.4	16	1.4
	c	3	.5	12	1.1
	d	9	1.6	41	3.6
	e	5	.9	32	2.8
14.	a	51	9.3	270	23.7
	b	120	21.9	493	43.3
	c	226	41.2	304	26.7
	d	78	14.2	49	4.3
	e	73	13.3	23	2.0

		College		Non-College	
Question		Number	Per Cent	Number	Per Cent
15.	a	77	14.1	357	31.5
	b	120	22.0	446	39.4
	c	173	31.7	238	21.0
	d	86	15.8	60	5.3
	e	89	16.3	32	2.8
16.	a	67	12.2	84	7.4
	b	193	35.2	242	21.2
	c	288	52.5	814	71.2
	d	0	0.0	0	0.0
	e	1	.2	2	.2
17.	a	162	29.5	251	22.0
	b	64	11.7	120	10.5
	c	305	55.6	700	61.3
	d	18	3.3	70	6.1
	e	0	0.0	1	.1
18.	a	34	6.3	208	18.7
	b	116	21.4	350	31.4
	c	180	33.3	343	30.8
	d	135	25.0	161	14.4
	e	76	14.0	53	4.8
19.	a	432	78.7	795	69.7
	b	116	21.1	341	29.9
	c	0	0.0	1	.1
	d	1	.2	3	.3
20.	a	484	88.2	887	77.7
	b	65	11.8	251	22.0
	c	0	0.0	2	.2
	d	0	0.0	0	0.0
	e	0	0.0	1	.1
21.	a	71	12.9	197	17.3
	b	476	86.7	941	82.4
	c	2	.4	3	.3
22.	a	36	6.6	191	16.7
	b	223	40.6	404	35.4
	c	290	52.8	544	47.7
	d	0	0.0	1	.1
	e	0	0.0	1	.1

		College		Non-College	
Question		Number	Per Cent	Number	Per Cent
23.	a	55	10.0	327	28.7
	b	52	9.5	206	18.1
	c	117	21.4	228	20.0
	d	96	17.5	184	16.2
	e	228	41.6	193	17.0
24.	a	501	91.4	926	81.4
	b	46	8.4	207	18.2
	c	0	0.0	4	.3
	d	0	0.0	0	0.0
	e	1	.2	1	.1
25.	a	156	28.5	237	20.8
	b	390	71.3	896	78.6
	c	0	0.0	4	.3
	d	0	0.0	2	.2
	e	1	.2	1	.1
26.	a	14	2.6	37	3.2
	b	103	18.8	219	19.2
	c	122	22.2	246	21.5
	d	94	17.1	220	19.3
	e	216	39.3	420	36.8
27.	a	14	2.6	75	6.6
	b	64	11.7	287	25.1
	c	120	21.9	321	28.1
	d	105	19.1	195	17.1
	e	246	44.8	264	23.1
28.	a	1	.2	5	.4
	b	5	.9	279	24.4
	c	33	6.0	411	36.0
	d	25	4.6	67	5.9
	e	485	88.3	380	33.3
29.	a	2	.4	2	.2
	b	17	3.1	568	49.7
	c	33	6.0	319	27.9
	d	73	13.3	99	8.7
	e	424	77.2	154	13.5

		College		Non-College	
Question		Number	Per Cent	Number	Per Cent
30.	a	446	81.2	449	39.4
	b	97	17.7	674	59.0
	c	0	0.0	5	.4
	d	1	.2	3	.3
	e	5	.9	10	.9
31.	a	8	1.5	33	2.9
	b	17	3.1	334	29.2
	c	73	13.3	385	33.7
	d	440	80.3	375	32.8
	e	10	1.8	16	1.4
32.	a	61	11.1	81	7.1
	b	113	20.6	288	25.2
	c	198	36.1	373	21.7
	d	115	20.9	229	20.0
	e	62	11.3	171	15.0

TOTAL 549

TOTAL 1,143

APPENDIX D

TABLE I. INTERCORRELATION MATRIX -- HIGH SCAT: COLLEGE VERSUS NON-COLLEGE

Group	Mo.Ed 1	C.Exp 2	SCAT V 3	SCAT Q 4	SCAT T 5	B.ASC 6	CI-So 7	CI-Id. 8	CI-It 9	CI-Fl 10	CI-Vo 11	CI-St 12	CI-Df 13	HSGPA 14	McCle 15
Crit.	.3025	.6121	.1566	.2279	.2593	.3554	.0398	.1641	.0814	-.2021	-.0276	.0628	.1193	.2305	.1169
1	1.0000	.1927	.1571	.0922	.1697	.1665	.1939	,0975	-.0738	-.0919	-.1035	-.0266	.0338	.0458	.0303
2		1.0000	.1773	.2377	.2813	.4591	.0901	.2148	.0803	-.2155	-.0431	.0571	.0811	.1793	.0651
3			1.0000	.0877	.7510	.3541	.1190	.1941	.0203	-.0865	-.1576	.0406	-.0042	.3333	.0959
4				1.0000	.7236	.3491	.0075	.1354	-.0190	-.0531	.0820	.0267	.0434	.2338	-.0051
5					1.0000	.4781	.0874	.2246	.0017	-.0944	-.0543	.0462	..0252	.3867	.0637
6						1.0000	.0371	.1283	.0628	-.1702	-.0707	-.0036	.0088	.5195	.0863
7							1.0000	.1743	-.1072	.1078	-.0800	.1235	-.0784	-.0380	-.0209
8								1.0000	-.1364	.0155	-.0897	-.0040	.0704	.0117	-.0679
9									1.0000	-.2006	.0382	-.1267	-.0630	.0179	.0851
10										1.0000	.0772	.2802	.2283	-.0516	-.0410
11											1.0000	.1039	.0715	-.0446	.0841
12												1.0000	.1834	-.0042	.0205
13													1.0000	.1002	-.0168
14														1.0000	.1571
15															1.0000

TABLE 2. INTERCORRELATION MATRIX -- HIGH SCAT: COLLEGE VERSUS COLLEGE-PERSIST

Group	Mo.Ed 1	C.Exp 2	SCAT V 3	SCAT Q 4	SCAT T 5	B.ASC 6	CI-So 7	CI-Id 8	CI-It 9	CI-Fi 10	CI-Vo 11	CI-St 12	CI-Df 13	HSGPA 14	McCle 15
Crit.	.0959	.2312	.1457	.1111	.1717	.2144	.0178	.0289	.0015	-.0586	-.0980	-.0195	-.0163	.2489	.1162
1	1.0000	.0778	.1553	.0155	.1156	.0972	.1209	-.0135	-.1341	-.0523	-.1003	-.0724	-.0080	.0282	.0169
2		1.0000	.1404	.0368	.1232	.3335	.0433	.1078	.0730	.0354	-.0478	.0560	.0536	.0861	-.0417
3			1.0000	.1193	.7602	.3741	.1314	.1924	.0012	-.0008	-.1163	.0049	-.0557	.3331	.1110
4				1.0000	.1356	.3211	-.0045	.1037	-.0177	.0484	.1096	.0073	.0342	.1648	.0217
5					1.0000	.4677	.0866	.1997	-.0103	.0323	-.0068	.0087	-.0167	.3363	.0911
6						1.0000	.0069	.0951	.0441	-.1107	-.0546	-.0677	-.0216	.5134	.0307
7							1.0000	.2157	-.1331	.0276	-.0642	.1345	-.1080	.0002	-.0026
8								1.0000	-.1625	.0210	-.0138	-.0357	.0479	.0097	-.0639
9									1.0000	-.1308	-.0195	-.1399	-.0489	.0031	.1237
10										1.0000	.0785	.2533	.1908	-.0513	.0151
11											1.0000	.0976	.0783	-.0495	-.0578
12												1.0000	.1220	-.0309	.0054
13													1.0000	.0868	-.0239
14														1.0000	.1860
15															1.0000

TABLE 3. INTERCORRELATION MATRIX -- MID SCAT: COLLEGE VERSUS NON-COLLEGE

Group	Mo.Ed 1	C.Exp 2	SCAT V 3	SCAT Q 4	SCAT T 5	B.ASC 6	CI-So 7	CI-Id 8	CI-It 9	CI-Fi 10	CI-Vo 11	CI-St 12	CI-Df 13	HSGPA 14	McCle 15
Crit.	.2991	.5493	.0600	.0946	.1595	.2453	-.0638	.1551	-.0431	-.1246	-.0279	-.0167	.0601	.1936	.0179
1	1.0000	.3505	.0833	.0606	.0246	.1391	-.0086	.0952	-.0148	-.0462	-.0577	-.0449	.1089	-.0084	.0814
2		1.0000	.0970	.1194	.2235	.4058	-.0057	.1534	.0238	-.2169	-.0305	-.0197	.0664	.1323	.0346
3			1.0000	-.5244	.4867	.0993	.0822	.0383	.1001	-.0147	-.0547	.0031	-.0179	.0932	.1257
4				1.0000	.4881	.1342	.0069	.0403	-.1235	-.0688	.0169	.0080	.0280	.1280	-.0650
5					1.0000	.2411	.0916	.0806	-.0221	-.0884	-.0388	.0106	.0087	.2269	.0653
6						1.0000	.0141	-.0038	.0493	-.2457	-.0677	.0124	-.0306	.4791	.0940
7							1.0000	.1963	.0160	-.1347	-.1046	.0013	-.3121	-.0732	.0057
8								1.0000	-.1352	.0388	-.0587	.0688	.0262	-.1781	.0056
9									1.0000	-.2316	-.0115	-.0987	-.1062	.0774	.0753
10										1.0000	.1348	.2979	.2221	-.1270	-.0257
11											1.0000	.1145	.0439	-.0253	-.0551
12												1.0000	.1597	..2205	.0420
13													1.0000	.1007	.0094
14														1.0000	.1828
15															1.0000

TABLE 4. INTERCORRELATION MATRIX -- MID SCAT: COLLEGE VERSUS COLLEGE-PERSIST

Group	Mo.Ed 1	C.Exp 2	SCAT V 3	SCAT Q 4	SCAT T 5	B.ASC 6	CI-So 7	CI-Id 8	CI-It 9	CI-Fi 10	CI-Vo 11	CI-St 12	CI-Df 13	HSGPA 14	McCle 15
Crit.	.1267	.2512	.1067	-.0542	.0569	.2010	-.0994	-.0056	.0087	-.0140	-.0986	.0646	.1170	.2768	.0167
1	1.0000	.2353	.1256	-.1420	-.0195	.0670	.0710	.0317	-.0329	.0321	-.0424	-.0219	.1774	-.0330	.1195
2		1.0000	.1296	.0949	.2504	.3719	-.0760	-.0233	-.0207	-.2486	-.0258	-.0323	.2148	.1025	.0741
3			1.0000	-.5942	.4379	.0203	.2083	-.0096	.1704	.1081	-.1868	-.1448	-.0082	.0353	.0268
4				1.0000	.4626	.1732	-.0347	-.0724	-.0888	-.2492	.1123	-.0361	-.0119	.1139	-.1035
5					1.0000	.2199	.1894	-.0916	.0890	-.1616	-.0816	-.2000	-.0224	.1687	-.0829
6						1.0000	-.2076	-.2142	.1710	-.2295	.0124	-.0820	-.0479	.4656	.0774
7							1.0000	-.1853	-.0050	.0422	-.1548	.0946	-.1153	-.0884	-.0485
8								1.0000	-.1734	.0763	-.1174	.1786	.1015	-.2368	.0824
9									1.0000	-.1426	-.0063	-.1328	-.2406	.0470	.0749
10										1.0000	-.0345	.1529	.0538	-.0834	.0302
11											1.0000	.0759	-.0981	-.0052	-.0467
12												1.0000	.2045	.0543	.0971
13													1.0000	.1142	.0918
14														1.0000	.1868
15															1.0000

TABLE 5. INTERCORRELATION MATRIX -- LOW SCAT: COLLEGE VERSUS NON-COLLEGE

Group	Mo.Ed 1	C.Exp 2	SCAT V 3	SCAT Q 4	SCAT T 5	B.ASC 6	CI-So 7	CI-Id 8	CI-It 9	CI-Fi 10	CI-Vo 11	CI-St 12	CI-Df 13	HSGPA 14	McCle 15
Crit.	.2793	.4538	-.0863	.1209	.1447	.2641	.1675	.0041	.0711	-.1728	.0222	.0046	.0155	.1556	.1797
1	1.0000	.2559	-.0877	.0187	.0764	.1400	.0775	.1288	.1172	-.0875	-.0746	.0075	.0694	-.0719	.0396
2		1.0000	-.0089	.0932	.0696	.3508	.0733	.0545	.0254	-.1564	-.0713	.0081	-.0163	.0294	.0300
3			1.0000	.0213	.7416	.2359	.0359	.0506	.2282	-.1829	-.0158	.0513	-.0038	.2976	.0498
4				1.0000	.6864	.1162	.0932	.0595	.0123	-.1051	.1285	.0040	-.0373	.2119	-.0156
5					1.0000	.2495	.0876	.0767	.1744	-.2035	.0745	.0394	-.0283	.3587	.0255
6						1.0000	.0648	.0025	.1083	-.1907	-.1069	-.0152	.0021	.3656	.0131
7							1.0000	.1859	.0800	-.1730	.0032	.0349	-.1478	.0193	.0544
8								1.0000	-.0854	-.0006	-.0411	.0523	.1039	-.0620	-.0393
9									1.0000	-.2467	.0734	-.0385	-.0023	.0956	.1683
10										1.0000	.0160	.2887	.2769	-.2804	-.1608
11											1.0000	.1785	.0998	.0299	-.0460
12												1.0000	.2315	-.0179	-.0331
13													1.0000	.0409	-.0109
14														1.0000	.0795
15															1.0000

TABLE 6. INTERCORRELATION MATRIX -- LOW SCAT: COLLEGE VERSUS COLLEGE-PERSIST

Group	Mo.Ed	C.Exp	SCAT V	SCAT Q	SCAT T	B.ASC	CI-So	CI-Id	CI-It	CI-Fi	CI-Vo	CI-St	CI-Df	HSGPA	McCle
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Crit.	.0262	.1802	-.0084	.0420	.0439	.3139	-.2434	.3830	.0141	.1002	.0377	.1352	.1286	.0037	.1002
1	1.0000	.2679	.0510	-.0817	-.0393	-.0658	.0655	.1559	.3342	.0187	-.1013	-.3683	.1123	-.4050	.0731
2		1.0000	.0864	.1136	.2111	.3534	.0384	.0476	.1745	-.1169	-.2567	-.3167	.1009	.0948	.1668
3			1.0000	-.5415	.3907	.0170	.1473	.1786	.1881	-.0349	-.5297	-.1401	.0912	.1812	-.0056
4				1.0000	.5620	-.1091	-.1823	-.0222	-.1100	-.0207	.4146	.0775	-.1427	.0613	.0108
5					1.0000	-.1023	-.0555	.1571	.0656	-.0548	-.0655	-.0183	-.0680	.2464	.0029
6						1.0000	.1749	.1050	.0490	-.1658	-.2406	.1199	-.1486	.2386	.0154
7							1.0000	-.1644	-.0238	.0813	-.0255	.1815	-.3991	-.2308	.0086
8								1.0000	.0772	.0854	-.1812	-.0842	.1364	.0630	-.0826
9									1.0000	-.0397	-.2172	-.2073	.1395	-.1725	.3180
10										1.0000	.0093	.1071	.0128	-.0036	.0442
11											1.0000	.2146	-.0141	-.1737	-.0110
12												1.0000	-.1502	.1742	-.1289
13													1.0000	.2327	.2536
14														1.0000	-.0277
15															1.0000